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Reconceptualising the Agenda for Education in the Caribbean

Proceedings of the 2007 Biennial Cross-Campus Conference in Education, 23–26 April, 2007, School of Education, UWI, St. Augustine, Trinidad and Tobago

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FOREWORD

The Biennial Conference of the Schools of Education of The University of the West Indies(UWI) was held from April 23 to 26, 2007, at the St. Augustine Campus. The conference theme was "Reconceptualising the Agenda for Education in the Caribbean." During the course of those brief four days, conference participants listened to and interacted with presenters who spoke on a rich diversity of issues. There was a range of contributions from fields such as science education, history, linguistics, technical/vocational education, psychological testing, early childhood education, communication studies, and foreign language education. The diversity of the offerings made for an interesting mix of interpretations and representations of the conference theme, which we now have the opportunity to re-appraise and review through this published conference proceedings.

In the year since the conference, several issues, such as those relating to assessment and gendered achievement, have assumed greater prominence in educational discourse. Other themes remain enduring ones for which we keep seeking answers. Thus, the compilation of conference papers should serve as a timely resource for those interested in pursuing the theme that had sustained our deliberations for those four days in April, 2007.

This conference proceedings has been made possible through the efforts of Mrs. Lynda Quamina-Aiyejina, who worked to collate the final papers, edit, and make them ready for publication, ably assisted by the members of the Editorial Committee (Dr. Dorian Barrow, Mrs. Janet Fullerton-Rawlins, Mr. Steven Khan, Ms. Patricia Worrell, Dr. Jennifer Yamin-Ali), who provided the guidelines and framework for the editorial decisions. I know that it has been an arduous year for them and, on your behalf, I thank them for their efforts.

Finally, I thank all those who made the 2007 conference a success. Your contribution of time and expertise gave the conference a professional ambiance that was appreciated by all.

Krishna Seunarinesingh
Chair
Biennial Conference Coordinating Committee

WELCOME MESSAGES

Head, School of Education
The University of the West Indies, St. Augustine

June George

It is with great pleasure that I welcome you to the 2007 edition of the Biennial Conference of the UWI Schools of Education. This conference serves to bring academic staff from the Schools of Education on the Mona, Cave Hill, and St. Augustine campuses together to make and renew acquaintances, and to share ideas about our work. It also serves to bring UWI staff in contact with other educational researchers with a Caribbean focus, as well as the many stakeholders in the national education sector of the host campus.

As we discuss how we might reconceptualize the education agenda in the Caribbean over the next few days, I trust that you will gain some new insights and that you will leave here with renewed determination to collaborate with significant stakeholders in providing more meaningful and relevant educational opportunities for our citizens.

Thank you for coming to the conference and welcome to the St. Augustine Campus of The University of the West Indies.

Dean, Faculty of Humanities and Education
The University of the West Indies, St. Augustine

Ian E. Robertson

The issue of reconceptualizing the agenda for education 45 years after the attainment of political Independence by Jamaica and Trinidad and Tobago would seem to invite questions about the nature of the agenda that has been pursued since the signal events of between 30 and 45 years ago. This, in spite of the fact that leaders in academic matters might well have forged ahead without being able to convince their peer stakeholders that the need for reform or even reconceptualization was vital to the capacity of the young nations to prepare their populations to deal with a world that was not standing still.

The theme of this conference is a public declaration of intent on the part of academic participants to present the appropriate challenges to education systems to force them to face up to the responsibility for ensuring that the societies are adequately equipped to deal with contemporary requirements and responsibilities.

This is the context in which the Faculty welcomes participants to yet another meeting of the Caribbean educators.

KEYNOTE PRESENTATION

Transforming Education in the Caribbean: Are We Ready For Change?

Keynote Presentation
Delivered at the
Biennial Cross-Campus Conference of the Schools of Education
St. Augustine, Trinidad, 23–26 April, 2007

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Introduction

Are we up to the task of transforming education in the Caribbean? If we go by C.L.R. James, then indeed we may be. But that remains to be seen. In his essay "The Making of the Caribbean People," James (1980) takes offence at what appears to be a suggestion by W. Arthur Lewis that there was some doubt as to whether our people could make the sacrifices necessary for economic development. Distancing himself from such scepticism, James asserted:

> I have never found that West Indians, when called upon in a critical situation, do not respond. That is their life. I believe that they can't help responding. Beginning as we do in a new civilization and leaving such elements that they might have brought with them behind, they have always responded to a fundamental and serious challenge. That is our way of life. That is why we are still alive. (p.175)

Decades on, after the first trickle then the flood of Independence witnessed by the region—the culmination of the work of founding visionaries—it is left to us now, inheritors of the legacy of freedom from colonial rule, to make more complete the project of political and psychological freedom. But we have had enough post-independence history now to know that breaking

away from inherited epistemologies and hardened habits, whether in the realms of governance, jurisprudence, administration, or indeed education, is easier said than done. A freed people, we are still not comfortable with the prospect of interrogating that to which we have grown accustomed by tradition. We are still hesitant to "buy local." And yet that is precisely what is needed in education in the region if we are to make forward strides on our own, without the training wheels of continued attachment to the colonial base. It might be argued that the Caribbean Examinations Council (CXC) embodies real evidence that we have been prepared to break away from the received model, and to launch out on our own with West Indian secondary school curricula and West Indian examinations. That, indeed, was a major tangible psychological breakthrough, though, as Carl Campbell (1987) documents in *Endless Education*, the impetus for this was largely pressure from below in the 1969–70 period, embodied in Black Power radicalism in Trinidad, which included the National Joint Action Committee's (NJAC) call for rejection of imposed colonial curricula—this call being taken up dramatically by Woodbrook Secondary School students—new Caribbean-related curricula in areas such as history and literature being at the core of their demands.

The replacement of the General Certificate of Education (GCE) and its infrastructure with the

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CXC now stands as the best evidence of what is possible when we as a people decide to interrupt a default flow of history and to make our own. As important as is the substance of making this change in the region, taking the received curricula and fashioning it to our own designs; by far the more important lesson from the CXC is its spirit— embodied in the act of saying we can do education on our own. CXC has been a resounding success as an idea, with its history being the evidence. And an equally important lesson from this history is that on matters which are common to us in the region, it is better to act in unison than independently—The University of the West Indies (UWI) and our cricket team being of course the best examples of what Caribbean cooperation is capable of accomplishing.

But education is more than curriculum and examinations; it is about access and possibilities, and here the CXC comes to its limit. To understand this, we must stand back and look at relationships between educational provision, opportunity structures, mobility, and well-being. And throughout the Caribbean we may find that, as in colonial times, there is great unevenness in access and in the quality of the education on offer, and high correlation between quality and scarcity. Errol Miller (2000) speaks of this tension between quantity and quality of educational provision as the region has striven to democratize education. Despite quantum educational advances since the Independence movement, the work ahead remains daunting. In Trinidad and Tobago, for example, estimates are that 70% of students are able to transition from primary to secondary school, and that the range of transition rates is large, varying from 40% in Tobago to 92% in St. Patrick. These are startling and sobering figures, though the country can point to great advances in secondary education provision over the decades. The shortcomings here help account for the relatively low ranking of the country on the 2006 Human Development Index; Trinidad and Tobago ranking 57 out of 177 countries overall.

Scarcity in provision and access means that, in some measure, education in Trinidad and Tobago and in most of the region might be likened to a zero-sum game, with winners and losers; those who have it thriving at the expense of those who do not. And this goes not just to access, since, as Miller (2000) points out, schooling is one thing,

but learning is another. Here we come face to face with colonial history and a legacy of curriculum differentiation where the children who score best on selective exams, and (in the Trinidad and Tobago case) those hand-picked by denominational bodies from the pool of successful candidates, are sent to the best schools, with high status curricula, while others are sent to less desirable schools. Ralph Turner speaks here of the inherited English logic of *sponsored mobility* (see Turner, 1960) where socio-economic status and access to high status schooling are intertwined. Turner explains thus:

> Under sponsored mobility, elite recruits are chosen by the established elite or their agents, and elite status is given on the basis of supposed merit and cannot be taken by any amount of effort or strategy. Upward mobility is like entry into a private club where each candidate must be "sponsored" by one of the members. (p. 856)

Some things die hard, and schooling as a basis of differentiation in the Caribbean will not go gently. And yet, if education is the key to forward movement in the region, by far the toughest challenge we may face on this count will be in rejecting this inheritance of sponsorship, and seeking ways to provide the best and most challenging curricula to all. Opposition to change of this order will come from many quarters, where there is vested interest in preserving the privilege that comes with sponsorship. An education system that is designed to raise the overall level of well-being of the masses, rather than to identify the best and the brightest, requires a completely different philosophy than that to which we in the Caribbean are accustomed. The challenges here do not end at the secondary level. Rather, they persist into tertiary education, and here again we have little history upon which to rely. What does an egalitarian-minded university education look like? The challenge here is to be able to see educational provision as continua rather than as duality, and by so doing we will be better able to accept that people with a range of talents can benefit from university exposure, and that the society will be better off for it. There is also an epistemic challenge around the question of what knowledge

is of worth. Here, colonial history works against us, such that implanted mental models we hold about what constitutes valid knowledge limit our vision about what is possible as spheres of study.

Many will not be able to conceive of careers and programmes of study beyond the traditional professions and disciplines. And yet, if we are going to transform education in the region, one of the requirements will be to remove artificial barriers between schooling at all levels and society, by validating knowledge that is constructed in everyday life, such as in workplaces, and engaging in inquiry around problems that ordinary people confront. Except for Guyana and Belize, we are islands, and yet the sea features little in the curriculum. In the United States (US) today, there is an interesting variation of the traditional discipline-based engineering degree called "manufacturing engineering," which responds directly to workplace needs. At the University of Wisconsin-Stout, which offers this degree in which there is less mathematics than regular engineering, and more hands-on applications related to the design of manufacturing cells, the demand by manufacturers for graduates exceeds the supply. This kind of approach to engineering is more inclusive than the traditional. It does not replace discipline-based engineering, but it is an example of what becomes possible when people are prepared to abandon received conceptual frames and to fashion new ones based on observation and experience.

In the remainder of this paper I continue to examine the question of our readiness for transformation of education, by pursuing the following course: (a) Global context of transformation, (b) Education and economic growth revisited, (c) Caribbean education, and (d) The prospect of change.

Global Context of Transformation

Across the globe in countries at various stages of development, there has been in the last two decades a revival of faith in human capital formation through education in school and out. Countries everywhere are seeking to rationalize their skill formation systems on the premise that herein resides the variable that can yield competitive edge in global competition. Even though social and civic considerations must still loom large in our educational visioning in the Caribbean, it is imperative that economic considerations be at the forefront of our thinking as well. Education is foundational to unlocking the creativity of our people in every sphere of life—at home, in the community, in industry, in agriculture, and in artistic endeavours. The challenge for countries in the region is to work out just how to employ this variable. In this section of the paper, I draw on recent educational reform experiences from the US, and from a growing literature on relationships between political economy and skill formation posture of countries, to see whether there are lessons from this that are worth the attention of the Caribbean.

US School Reform and Skill Polarization

We may conveniently set the starting date for the last quarter century of focus on the impact of schooling on global competitiveness at 1983, the year of the publication in the US of *A Nation at Risk*, authored by a blue ribbon commission, in which alarms were raised about the decline of US manufacturing relative to the Japanese. Searching for an explanation of Japanese edge, authors settled on the differential quality of education. While there has been much contestation surrounding this issue, what emerged in the US has been greater appreciation of the need for a new regime of academic basics and rigour in the schools. The recourse to academics that continues apace still, with focus on rigorous discipline-based coursework and "high-stakes" testing, has been referred to as the first wave of school reform. Education in the US had for most of the 20th century been distributed on the basis of race and socio-economic status, with the tracking of students on these bases into the preferred college-bound trajectory, where they took academic coursework as opposed to the general or vocational tracks where the curriculum was less rigorous. The first wave of reform offered hope that there would be retreat from tracking. But that was short-lived.

Subsequent to *Risk,* a second argument was set forth about decline of American manufacturing competitiveness, the thrust of it being that where the US loses the competitiveness battle is on the factory floor among mid-level workers. The arguments here were compellingly set forth by

Lester Thurow (1992) in *Head to Head*, in which he argued that at the highest levels of the labour force, US workers are better educated than their counterparts in Japan, Germany, and elsewhere; the American higher education system providing a constant supply of highly educated graduates to the labour market. But there was a soft middle in US education that results in inferior performance and adaptability on the factory floor, compared to mid-level German and Japanese workers. Workers of the latter countries were more broadly educated, and more easily adaptable in workplaces that had become increasingly more technology-driven and given to constant change.

This line of argument was also offered by Carnevale, Gainer, and Meltzer (1988) in their influential book, *Workplace Basics—the Essential Skills Employers Want*. The skills included learning to learn, problem solving, and communicating. Absent was any attention to discipline-based knowledge. This focus on the middle added a new dimension to the reform movement—a second wave of reform—characterized by a strong chorus in sympathy with the idea that schools should admit that many children would not go on to four-year college, and that these so-called *non-college bound* students required their own structured trajectory leading to the workplace. There was a preoccupation here with the creation of school-to-work transition structures, and the reconceptualization of vocational education so that its academic content would be increased. At the policy level, this strand of reform was supported by legislation in the form of iterations of the Carl D. Perkins Act and the School-To-Work Transition Act of 1994. It also derived philosophical impetus from the publication of the SCANS (Secretary's Commission on Achieving Necessary Skills) report, which set forth the basic skills that schools needed to provide students who were non-college bound. Basically, it was the Three Rs, thinking skills such as problem solving, and personal qualities. Out of this ferment emerged reform initiatives such as Career Academies, High Schools That Work, and Tech-Prep (Technical Preparation), all having in common the integration of academic and vocational knowledge, and the more deliberate connection of high schools with two-year technical and community colleges.

Fundamentally, the two waves of reform in the US, the one offering white collar literacy and the other working-class literacy, resulted in the following policy positions:

1. Every child will start school ready to learn.
2. The high school graduation rate will increase to at least 90%.
3. American students will leave Grades 4, 8, and 12 having demonstrated competency over challenging subject matter.

One important aspect of the US reform movement is that it has caused scholars and policy makers to look comparatively at educational provision and process, particularly in respect to Asian countries (e.g., Baker, 1993; Gordon, 1987). Such scrutiny has yielded some clues to the success of Asian children in academics, including a cultural backdrop of harmony and order; direct teacher-centred instruction; balanced curricula such that science gets as much attention as social studies in the primary grades; and engaging of children emotionally at an early age. In response to perceived and observed differences between American and Asian schooling practice, there has been in the US greater scrutiny of teacher preparation, and radical proposals for the reform of teaching. One of the reforms, the Holme's Group Proposal, called for all teachers to have a degree in their area of specialty prior to embarking upon programmes of licensure. This extended the length of preparation prior to teaching to between five to six years. Also included here was the provision of professional development schools, on the teaching hospital, medical model. School reform in the US has also meant increased focus on testing, with initiatives such as America 2000 and its replacement, Goals 2000, specifying targets such as: including English, mathematics, science, foreign languages, civics and government, economics, art, history, and geography.

Resnick and Resnick (1985) analysed US education and offered lines along which there could be improvement, including (a) upgrading the curriculum through more stringent course requirements, and (b) moving from testing to English-style examinations.

Persistent inequality. But amid calls of this order, inequality in educational provision and

achievement persist, such inequality being reproduced by continued systematic patterns of differentiation and exclusion in education (see Bowles & Gintis, 2002; Gamaron, 2001) to the detriment of the under-classes, among whom are minorities (especially blacks and Hispanics).

David Berliner (2006) contends that poverty is the root cause of the problem of the academic achievement gap between majority and minority children in the US, and that its eradication is the key to having educational reforms take hold and to closing that gap. A recent briefing before the US Commission on Civil Rights provides data that illuminate the observations of Bowles and Gintis (2002). In their testimony, experts agreed that following the passage of civil rights legislation in the 1960s, the black middle class grew steadily in relation to whites until the 1980s, after which their percentage has remained constant (U.S. Commission on Civil Rights, 2005). Much of the testimony was devoted to possible reasons for this stagnation, including the need for an increased percentage of black families with two adult earners, and for continued vigilance with respect to the enforcement of anti-discrimination laws in workplaces. But the consensus view was that the primary problem lay in continuing barriers faced by black children in gaining access to high-value academic education. *Schooling was standing in the way of economic and social advance.* This view is captured in the testimony of one panellist who contended that "children from working class and low-income backgrounds are more likely to be placed into lower track classes, placed in less rigorous schools, and be less college prepared. As a result, they are less able to compete for middle-class occupations" (p. 3). My own recent study of vocational education reform in American high schools showed that socio-economic status of the student population was the most significant predictor of the dominant track in schools, and the likely post-school destinations predicted by principals (Lewis & Cheng, 2006).

Whatever the politics, current attempts by the Bush Administration, in the "No Child Left Behind" legislation, to hold schools accountable for children's learning is on target, to the extent that it keeps the issue of race and class-based tracking on the table.

Standards-based education. Importantly, school reform in the US has given rise to the standards movement, which is focused upon the various subjects, spelling out the content to be taught in each grade level. Beyond the identification of content to be taught, the movement has included specification of approaches to assessment, pedagogy, and professional development. Associations such as the National Council of Teachers of Mathematics (NCTM), the National Academy of Science (NAS), and the American Association for the Advancement of Science (AAAS) have set forth standards that delineate what students should learn when they study mathematics and science. Some are of the view that the standards movement, with its emphasis on having all students achieve at high levels, will allow children who traditionally are left behind to begin to catch up. Schoenfeld (2002) has provided data indicating that when standards-based reforms are implemented:

> The bottom line is that standards-based reform appears to work when it is a part of systemic effort in which curriculum, assessment, and professional development are aligned. Not only do more students do well, but the racial performance gap diminishes substantially. (p. 17)

Some commentators (e.g., Porter, 1993) are of the view that schools must be held accountable if reforms leading to improved student achievement are to take hold.

Skill and Qualifications

Noticeably in Europe, countries are seeking to systematize and make transparent their stock of skill. Michael Young (2003) observes that countries everywhere are doing this by resorting to national qualification frameworks. The establishment of such frameworks is not without challenge, especially since "high skills" cannot mean mere educational and training provision, abstracted from the cultural context. Keating (2003) points out the difficulties in Australia as that country seeks to align secondary, vocational, and university credentialing to establish articulation across institutions, quality control, and coherence. Bouder (2003) shows, in the French case, that it is

one thing to establish qualifications frameworks, but that this is not an objective activity. It requires the support of stakeholders. Linda Clarke and Christopher Winch (2006) show how differences in Anglo-Saxon versus Germanic conceptions of skill make the idea of a unifying European skills framework problematic. Where skill is an attribute of jobs in British tradition, it is a mark of social rank in German tradition.

Models of skill formation. The quest by countries for arriving at postures that best allow them to mobilize skill has become the basis of scholarship that has yielded country typologies. These typologies tend to be premised upon the view that skill formation approaches are dictated by the ideologies underpinning the political economies of countries. In their run-up to identifying country skill typologies, Ashton and Green (1996) offer a theory of skill formation systems comprised of a hypothesized six conditions that are necessary for achieving high levels of skill formation. Paraphrased, they include:

1. Commitment of the state to the goal of high skill formation, and "innovative use of the productive system" (p. 100) in this cause.

2. An education system that produces high levels of *basic competence* in science, mathematics, information technology, and language among school leavers. Thus, a *large majority of school leavers* must leave with intermediate levels of qualifications in such subjects.

3. Employers must be committed to the goals of high skill formation, and be themselves willing to engage in worker training, the workplace being a critical site of work-based learning.

4. Need for "regulation and accountability" of skill formation activities that occur in the workplace. Here they speak of the need for employers to take a long-term rather than a short-term view of training, and thus to see the social benefits of training in the workplace.

5. Workers and prospective workers must be committed to the goal of continuous development at work.

6. A structured system of on-the-job learning to be complemented by off-the-job training in basic knowledge and skills. (pp. 99–104)

On the basis of such criteria, Ashton and Green (1996) identify polar types of economies based upon the historical record of the way state formation, industrialization, and class relations interplayed in the advance of these countries. Thus, they suggest that there are countries that have taken a *low-skill route*, particularly Britain and, to some extent, the US. They acknowledge the world-class status of American higher education, but point to a large section of the population whose lot is "declining real wage rates, poor levels of educational achievement and low-level skills and insufficient access to work-based training" (p. 127). They note that: "the extreme polarization of the labour force is mirrored by considerable inequities in the quality of school provision, and relatively severe educational problems among its young college drop-out population" (p. 133). (Indeed, in *The Work of Nations,* Robert Reich (1991) points out that only 20% of the American workforce have the *symbolic-analytic skills* needed to make a difference in global business.) Countries that Ashton and Green identify as having taken the *high-skills route* include Germany and Japan—well established; and the Asian Tigers inclusive of Hong Kong, Singapore, Taiwan, and South Korea—well on their way. In the latter countries, there is tight linkage between state formation and industrialization, and education and training systems that have low autonomy and are directly responsive to the demands of the productive system.

Caroline Lloyd and Jonathan Payne (2005) raise questions regarding what model of a high-skills society the UK might choose. They raise doubt as to whether skills can deliver outcomes such as higher wages, lower unemployment, pay for a viable welfare state, and provide equality of opportunity. But they assert that:

> our view is that any high skills vision must include a wider set of criteria than the sum total of skills in use within a particular nation. It is ultimately about *what type of society we would like to see created* and, in this sense, it is a political choice

between alternative social and economic outcomes. (p. 167)

Thus, they set forth their own criteria for selecting a high-skills vision, including:

- a relatively high proportion of intermediate and high-skilled jobs, alongside greater levels of participation and autonomy at work;

- a more equal distribution of income;

- better provision and more equal access to welfare, health, and education;

- strong labour and social rights; and

- relatively high waged. (p. 167)

With these criteria having been set forth, they declare that the UK and US do not offer a desirable vision of a high-skills society. And like Ashton and Green (1996), the reasons they offer here include high levels of social inequality, limited union and worker rights, polarized distribution of skills, low wages, and long working hours (p. 168). They discount Japan due to lack of autonomy of work and intense work routines. Likewise, they discount South Korea and Singapore as being authoritarian states. They settle on Germany and Scandinavian countries as best meeting their criteria. Thus "Germany is ahead if we prioritize skill levels, while the Scandinavian countries tend to come out on top in terms of egalitarian outcomes and broader social benefits" (p. 170). But in settling on these countries, they note the perils, such as unequal participation of women in the German economy and pressure on German skill systems by new Japanese production methods.

Green and Sakamoto (2001) used Total Factor Productivity (TFP) as the best indicator of competitiveness. It includes both capital and labour productivity. With respect to high skill, they set forth a typology of countries as follows:

The High Skills Society Model—Germany

The Development High Skills model—Singapore

The High Skills Manufacturing Model—Japan

High Skill/Low Skill Model—The United Kingdom (and the United States)

We see here the recurring characterization of the UK and US as undesirable skill models. Despite the widespread availability of higher education, the US is so pegged because most new jobs are in the low-skill sector, and because of differentiated access to high-skill jobs. Why is Germany the high-skill model? The country compares favourably with other developed countries in the production of science graduates, but it excels in the production of intermediate skills via the Dual System. Using the benchmark of Level 3 to be the equivalent to three or more years of apprenticeship, over half of the German working-age population are at this level. For Japan, the figure is approximately 40%; for Korea, 9%; and the UK, 18%. Beyond the distribution of skill throughout the workforce is the presence of trust embedded in the society—deriving from a training system premised in *social partnership*.

Coates (2000) contends that the UK and US, prototypic market-led capitalist economies, have lost competitive edge because of "inability of liberal modes of capitalist organization to tap into (and to harness) sources of economic adaptability and change rooted in competitive relationships which are mediated through relationships of cooperation and trust" (p. 52). The countries of East Asia and Continental Europe that have shown dramatic growth in recent decades *have been able to meld competition and cooperation*, making them trust-based economies, whether *state-led* (Japan, South Korea) or *consensual* (Scandinavian countries and Germany). Coates draws on evidence suggesting that, different from *trust-based* economies, market-led ones offer inadequate levels of formal education and training to middle- and lower-skill levels of workers.

Ashton, Sung, and Turbin (2000) strive to improve upon the models by suggesting that the relationships that are central to skill formation are those involving the State, inclusive of the political elite, the education and training systems, capital in the form of employers, and workers and their organizations. These actors exert varying levels of influence on each other. Out of this is derived:

1. The market model…with the dominance of capital (US, UK). Coordination of skill supply and demand is slow.

2. The corporatist model; government and state apparatus playing strong roles in driving industrialization by encouraging the modernization of industry and using education in nation building (Germany, Austria, Switzerland, Netherlands, Denmark). The State is involved with unions and employers as social partners.

3. The developmental state model (Singapore, Japan, South Korea, Taiwan). These countries rely on the market for wealth creation but, unlike market economies, there is a state presence in driving industrialization. The State plays a leading role in training. In South Korea and Taiwan, youth are channelled to vocational schools

4. The neo-market model…featuring centralized education, and a history of IMF intervention (e.g., Mexico, Brazil, and Chile).

What trends emerge from the high-skill typologies? We begin to see that high skill cannot be taken just as credentialing; that it goes with the attendant value orientations of countries. High skills require at minimum a free society, in which workers and their representatives have voice in nation building, jobs are available, wages are relatively high, and basic amenities are present. High skill means widespread distribution of education and trained capability. It also requires the collaboration of important stakeholders, such as the State, employers, and workers and their representatives. But what cannot be discounted here is the intangible factor of national value systems, seen, for example, in the German adaptation of the principle of *productive* powers, as articulated by philosopher Freidrich List, where progress is seen as being connected to a long-term view, habits, and civic virtues and relations inclusive of education, religion, and morality (see Winch, 1998). There is also a view that Asian success cannot be disentangled from the strong Confucian influence on social life, where harmony and discipline are guiding ethics. It is instructive that Britain, to which the Caribbean traditionally has looked as exemplar of educational provision, is itself in search of a high-skill identity. The traditional British approach of voluntarism in the offering of technical skill, and class differentiation in the offering of academic skills, comes up short

of what is required now. It can be seen that the US, too, despite its well-established system of higher education and the wide distribution of tertiary education, falls short because of persistent inequality in the education, which leaves significant percentages of minorities and the poor behind.

Some Lessons for the Caribbean

As we look at global movements toward skill formation, the lessons for the Caribbean are many, but at minimum they include the following:

1. The need for a broad view of skill that issues out of some grander philosophy of the kind of society we wish to have.

2. That high skills are problematic if the presence of such in the society is accompanied by social inequality.

3. That the normal places to which we have turned historically in search of educational models are themselves searching globally for answers to their reform questions.

4. That learning in the new global economic order takes place in school and out, and that, accordingly, education policy must feature rationalizing of schooling and post-school training systems.

Education and Economic Growth Revisited

The validation of human capital theory notwithstanding, there still remains conflicting evidence on the relationship between investment in education and economic growth. Investment in primary education has had support, but not so much in secondary and tertiary education. In the Caribbean with a history of slavery, indentureship, and colonialism, where deprivation of education was integral to the maintenance of power differentials in the society, education necessarily must serve the furtherance of the project of freedom, self-sufficiency, and self-hood. Imperfect as the education systems of the respective territories may be, the region is infinitely better of now than in the pre-Independence era, in creative tone, in political sophistication, and in relatively high degrees of tolerance for difference, and much

of that can be attributed to schooling at all levels and the resulting advance of literacy. Still, mere provision of education alone will not necessarily yield growth. Much has to do with the *focus* of education, the distribution, the quality, and the extent to which it can be connected to the productive system. One way to look at this might be to ask what can be done to make education in the region more effective if we are forced to make do with existing infrastructure. Is there room for innovation? For more effective teaching? For different approaches to the curricula?

Some commentators continue to cast doubt on the extent to which improvements in education can be traceable to economic performance. Drawing on evidence from Latin America, Bonal (2007) questions why investment in education in that region has not reduced poverty. He contends that children from poor homes have unequal chances to make capital of education. He notes further that elementary education does not provide sufficient safeguard against poverty, asserting that at least 12 years of schooling are required as the threshold there. Bonal points to untoward effects of education, where, as the supply of educated labour increases, the wage decreases. He points to effects of the global economy, such that only highly qualified workers can protect the value of their qualifications against exposure to international competition. The result is persistent inequality and poverty in the region. As Bonal puts it: "globalization and educational expansion are, therefore, two sides of the same coin, explaining the paradox of both the need for and the insufficiency of education" (p. 90). He laments a treadmill effect where the educational threshold that must be met to escape the poverty trap continues to increase when measured in years of schooling.

In the US, such scepticism has been raised by Henry Levin (1998), who contends that while the educational reform movement is premised on an economic rationale, it has not been shown that there exists a link between standards and economic performance. Bils and Klenow (2000) find from cross-country data that only one-third of relationships between schooling enrolments and subsequent growth is attributable to schooling.

Ramirez, Luo, Schofer, and Meyer (2006) find from cross-national data that indeed countries with high achievement scores in mathematics and science experience greater economic growth than others, but that the *effect is reduced when Asian countries are removed from the analysis*. They surmise that the connection seen between academic achievement and growth in Asia might be case sensitive; that "perhaps regimes making a push for development can also make a push for disciplined student achievements in areas such as science and mathematics, which less pressured students might choose to avoid" (p. 22). In consuming the results of this study, we may choose from either the full or the empty half of the glass. For the Caribbean, the full half is more instructive, for it shows the role of national will—of political economy—as an enabling variable in effecting connection between educational provision, academic achievement, and growth.

The positive relations for Asian Tigers that Ramirez et al. (2006) show between academic achievement and growth are also shown by other studies. Schofer, Ramirez, and Meyer (2000) found that *the size of a skilled scientific labour force* substantially and positively influences economic growth. This study showed that investment beyond primary school has a payback. Investment in tertiary education, *especially in the sciences and engineering,* produces economic effects. The authors noted that countries with significant numbers of scientists in the labour force tend also to have state control of the economy and strong macroeconomic development policies. This is the profile of the newly industrializing countries of Asia. The study looked at the 1970–1990 period, the sample varying from 80–112 country cases depending on which variables were included in analysis. In similar vein, Hanushek and Kimko (2000) adopted a new approach to human capital research by using *quality* rather than quantity measures as independent variable. Thus, cognitive performance on international tests (in mathematics and science) was employed as a measure of labour force quality. Direct measures for 39 countries were available. The study found that labour force *quality* has a strong relationship with economic performance; the effects here not seeming to relate to the presence of particular resources.

While the evidence from Latin America raises cautions about ways in which the provision of education can exacerbate the problem of poverty, by depressing wages, contrary evidence has been

found from India. Tilak (2006) reports that education has been a significant contributor to economic growth in India, and that such investment yields dividends with respect not just to the primary level, but to the secondary and tertiary levels as well. Tilak provides data in the Indian case showing correlation between illiteracy and poverty, and between primary education and poverty. The lesson here is that primary education alone is insufficient to help people combat poverty and illiteracy. He notes that the higher the percentage of population in a state who have secondary education and above, the lower is the poverty level in the state; this relationship being more significant in urban areas. Tilak concludes that secondary and higher education play significant roles in the development of countries, in terms of economic development, poverty reduction, life expectancy, and infant mortality (p. 9).

The equivocation in the literature notwithstanding, there is no question that throughout the Caribbean, education must continue to be a high priority focus of governments for reasons that are economic, social, political, and civic. It is arguable which of these should be at the tip of the spear, but it is noticeable that rich countries are better able to offer high-quality education to their citizens than poor ones. In the Caribbean, people who are better off economically have more degrees of freedom when making educational choices for their children. This alone tells us what our order of priority should be. The education of children must issue from homes in which adults have jobs that pay good salaries, and standards of living that are sufficiently affordable to provide the basic comforts supportive of learning, and savings to support the furtherance of such learning. But there are limits to mere education. Kenneth King and Pauline Rose (2005) speak here of the need for us to pay attention to the *moral economy* of the region, that is, to value commitments and shared understandings, such as respect for the rule of law, valuing not just talent but effort, and having genuine meritocracies such that those who play by the rules get just rewards.

Caribbean Education

Education has served the Caribbean well. The region has produced iconic scholars including three Nobel Laureates. The availability of this high level of talent in the first half of the last century enabled us to gain and consolidate independence in the second half. Scholars like Eric Williams and C.L.R. James led the onslaught with their anti-colonial critique, supported by meticulous scholarship. This availability of talent also enabled us to start and grow an excellent regional university—UWI—which in turn has provided the region with political leaders, doctors, engineers, teachers, civil servants, and upright discerning citizens in all forms of life. Graduates of our high schools hold their own at great universities throughout the world. Throughout the region there is a relatively high level of basic literacy. More importantly, there is a reasonably high level of order, which translates into stable government and smooth transitions of political power based on elections. But the region needs to work harder on this qualitative dimension. There is now, of course, the spectre of crime that exposes the small size and fragility of countries; the actions of a determined law-breaking minority threatening to disrupt the quality of life of the majority. But amid it all there is still intellectual vibrancy, noticeable in the press, evidence of a large font of critical literacy among the people, with average citizens exercising the right to express opinion.

In his assessment of reforms in the region in the independence era, Errol Miller (2002) identifies a trajectory from 1944 to the 1960s during which the electorate replaced old-order politicians, who had functioned under conditions of restricted franchise, with a new breed whose immediate agenda included expansion of educational opportunities for those once so dispossessed. He continues that rather than address issues such as race, ethnic, and social barriers directly, the new leaders chose nationalism and nation building as proxies. Historical differences on account of race, ethnicity, and class could be parsimoniously dealt with by the mechanism of democratized educational opportunity at all levels. Miller goes on to identify what he believes are clear achievements of the era, and they include real gains in provision at all levels from pre-primary through secondary; expansion of tertiary education

through the establishment of UWI and a host of colleges; curricula more in keeping with Caribbean culture; the establishment of CXC; and successful non-formal programmes in adult literacy and skill training.

But despite the gains, Miller (2002) contends that there remains an unfinished agenda. Thus: "notwithstanding the impressive gains, the goals of equity and equality of opportunity remain distant for the majority of the Caribbean people. While the barriers of ethnicity, race, and class have been lowered, they have not been removed" (p. 5). The conclusion to which Miller comes here is in keeping with the assertion made earlier in this paper, that education is not about examinations and curriculum, but about access and possibilities. It is true that the perfect is not the enemy of the better—that where we find ourselves now in the 21st century is in a place vastly superior to where we were at independence. But our struggle now is not with history. "Colonialism gone," as Sparrow said. Rather than looking back we must now look *across* in this new flat world (Friedman, 2005), not just to North America and the UK, but also to the Newly Industrializing countries of Asia— countries that at the middle of the last century had the same strivings as we do now, and that have leap-frogged to "developed" status in shorter time frames than thought possible.

Table 1 shows 2006/2007 ranking of the global competitiveness of selected countries by the World Economic Forum, using indices that include health and primary education, higher education, and innovation. The table shows that along with the more traditional developed economies stand the Newly Industrialized ones such as Japan, Singapore, Taiwan, and South Korea. Except for Barbados, Caribbean countries are not favourably ranked.

Table 1. Global Competitiveness Rankings 2006/2007—Selected Countries

Country	GCI Rank	Health and Primary Education Rank	Higher Education Rank	Innovation Rank
Switzerland	1	29	6	3
Singapore	5	20	10	9
United States	6	40	5	2
Japan	7	1	15	1
Germany	8	71	18	5
United Kingdom	10	14	11	12
Hong Kong	11	35	25	22
Taiwan	13	25	7	8
Canada	16	2	17	13
Korea S	24	18	21	15
Barbados	31	28	24	49
Jamaica	60	65	67	54
Trinidad & Tobago	67	64	65	67
Guyana	111	75	114	116

Source: Global Competitiveness Report 2006/2007—World Economic Forum, released 26 September, 2006.

Table 2. Top 10 Countries: Global Competitiveness rankings 2006/2007

Country	GCI Rank	Higher Education and Training	Innovation
Switzerland	1	6	3
Finland	2	1	4
Sweden	3	3	6
Denmark	4	2	10
Singapore	5	10	9
United States	6	5	2
Japan	7	15	1
Germany	8	18	5
Netherlands	9	8	11
United Kingdom	10	11	12

Source: Global Competitiveness Report 2006/2007—World Economic Forum, released 26 September, 2006.

Table 2 shows the top 10 ranked countries, and it can be seen that they tend to rank near the top in innovation, and in higher education and training. The relatively low German ranking on higher education but still high overall ranking speaks to the country's emphasis on spreading trained capability across the middle.

Table 3 shows the rankings of selected Caribbean countries compared with selected traditional developed countries, along with Japan and Singapore, newly industrialized countries. The data reflect both university and two-year post-secondary institutions. Barbados again shows admirably, ahead of other countries in the region.

Table 3. Tertiary Education Gross Enrolment Ratio (Selected Countries)

Rank	Country	Tertiary Enrolment
1	United States	72.6
10	Canada	60.0
11	United Kingdom	59.5
29	Japan	47.7
31	Germany	46.3
39	Barbados	38.2
46	Singapore	33.7
60	St. Lucia	25.4
64	Cuba	24.2
78	Jamaica	16.4
97	Guyana	9.7
108	Trinidad & Tobago	6.5

Source: UNESCO (NationMaster.Com)

Provision

Comparisons with developed countries are useful in that they point us to the nature of the task ahead. When we include the Asian countries and see their very favourable comparative showing, we can find therein some valuable lessons for what might be possible in the Caribbean. This section of the paper reflects upon the provision of education from kindergarten to university, bearing in mind the conclusion of Miller (2000) that here the region still has far to go, not just in the quality of education on offer, but on account of asymmetrical distribution.

Table 4 shows that on the question of pre-primary education, while there is some variance among the countries, the big picture is that this very critical level of education is offered in high degrees in most of the countries, Belize being the outlier. This is a major plus, since from a cognitive standpoint this is the most crucial period of development for children, a time when they begin to acquire literacy. The region has to do its utmost to regulate the training of providers at this level to ensure needed quality. But more to the point, there is need to ensure that every preschool child has access to schools at this level. Table 5 shows high degrees of access to primary education throughout the region. The table is limited in the extent that it cannot show within-country variation in access.

Table 4. Country Rankings: Gross Pre-Primary Enrolment (2004)

Country	Gross Pre-Primary Enrolment
Cuba	116.5
Guyana	114.8
St. Kitts & Nevis	101.4
Jamaica	92.5
Barbados	89.0
Trinidad & Tobago	86.4
St. Vincent & the Grenadines	85.7
Grenada	80.6
St. Lucia	70.7
Dominica	64.7
Belize	28.2

Source: USAID Educational Statistics for Latin America and the Caribbean.

Table 6 shows that secondary education in the region is for the most part widely distributed, though, clearly, some countries, including Trinidad and Tobago, show more than one-quarter of children not progressing from primary to secondary schooling.

Table 5. Country Rankings—Net % Primary Education (2004)

Country	Net % Primary Education
St. Lucia	97.6
Barbados	97.2
Cuba	96.2
Belize	95.2
St. Kitts & Nevis	94.0
St. Vincent & the Grenadines	93.9
Trinidad & Tobago	92.2
Jamaica	90.6
Dominica	87.7
Grenada	83.9
Bahamas	83.7

Source: USAID Educational Statistics for Latin America and the Caribbean.

Table 6. Country Rankings: Net Secondary Enrolment

Country	% Net Secondary Enrolment
St. Kitts & Nevis	98.3
Barbados	95.1
Dominica	90.4
Cuba	86.6
Jamaica	79.2
Grenada	78.2
Bahamas	73.8
Trinidad & Tobago	71.9
Belize	71.4
St. Lucia	71.1
St. Vincent & the Grenadines	62.3

Clear disparities can be seen across the region. Of course, this is perhaps the most politically sensitive level of education in the Caribbean, not so much because there is scarcity of places (more so in some countries than others), but because the schools tend to be of differentiated quality; the prized among them being those in the English grammar mode, accepting mainly the very best, based on examinations; such examinations being always in favour of those children who are more privileged than others.

Table 7 shows rankings for tertiary education, inclusive of university and post-secondary community and technical college places. There are disparities here too across the region, and as shown in Table 3, most Caribbean countries fall behind on this index, comparatively speaking.

Table 7. Country Rankings: Gross Tertiary Enrolment

Country	Gross % Tertiary Enrolment	Year
Barbados	37.75	2001
Cuba	32.96	2003
Jamaica	18.99	2003
St. Lucia	14.42	2004
Trinidad & Tobago	11.90	2004
Guyana	9.08	2004
Belize	2.62	2004

Reflection on Recent Caribbean Literature

Several themes emerge from available literature on Caribbean education within the past two decades that are of relevance here. They include (a) Education/Curriculum change (Jennings 1993; London, 1997; Miller, 2002); (b) Class and education (Hickling-Hudson, 2004; Strudwick & Foster, 1991); (c) Teacher change (George, Mohammed, & Quamina-Aiyejina, 2003).

London (1997) uses the example of the shift to essay writing as part of the Common Entrance Examination in Trinidad to show the difficulties attached to effecting change. The state met opposition, and countered by bringing in a foreign consulting firm with expertise in assessment to bolster its commitment to make this change. London expressed some reservation that the state would not understand the sensitivities here. The hiring of a foreign firm rekindled old questions regarding dependency. He wrote that the hiring was a retrograde step, which had the effect of "reinforcing the nation's colonial reliance on the metropole, but even more devastating is the psychology of dependence which the arrangement had the potential to perpetuate" (p. 75). London (2003) addressed the question of English imposition of the English language on ex-colonies, where the local Creole could not find legitimacy, being made to serve mainly as the references point for perfecting use of pure English.

One strain of the literature examines questions surrounding teacher change. Jennings (2001) examined challenges teachers faced in implementing policy, in the face of the realities of practice. She identified four kinds of constraints, including (a) physical and material conditions of schools, (b) the home environment of children and their level of literacy, (c) lack of support from principals, and (d) personal shortcomings. The first two of these were the more telling. In their study of beginning teachers, George, Mohammed, and Quamina-Aiyejina (2003) caution that teacher identity is a variable in educational reform. There cannot be disjuncture between teacher perception of themselves and the nature of teaching as a vocation, and the actuality of classroom life.

Jennings (1993) examined processes of curriculum change in the Caribbean, finding that they conform to an array of change models, such as Research, Development, and Diffusion Centres, Centre-Periphery, and Problem Solving. She notes that it is the central governments that have responsibility for articulating "larger purposes of education," resulting in curricula that respond to ideologies of those in power. She posed the following questions: *Who decides what methods teachers should use? Who decides what to teach?* She noted low pass rates in Caribbean exams, and suggested the need for an evaluative system that includes observations of how teachers use CXC syllabi as part of a system of accountability for student performance. Teachers reported a host of constraints on their ability to participate in curriculum development. Some were physical, such as poor conditions of schools. Others were existential; teachers needing their spare time to earn money to supplement their incomes.

Some of the work has dwelled upon the question of schooling and class. In an account of the hiring of Cuban teachers in Jamaica, Hickling-Hudson (2004) makes observations about disparities in school quality. She writes that:

> The ghost of colonialism remains in the deep-seated inequities that are difficult to dislodge from the education system. The current Jamaican government is committed to reducing the huge disparities inherent in Jamaica's three school types, the Elite High Schools, the less well-endowed secondary modern style 'New Secondary' schools, and the impoverished and formerly neglected 'All-age' schools. These constitute a pyramid of minority privilege and majority disadvantage. (p. 290)

New secondary and all-age schools are characterized as poor cousins of the grammar schools, being overcrowded and resource-poor. And these are the schools relegated to the poor.

Also set in Jamaica, Strudwick and Foster (1991) followed 1,010 fifth form students from 19 randomly chosen secondary high schools in Jamaica, seeking to establish whether factors such as social class, academic performance, and the reputation of schools could predict subsequent educational and occupational experiences. In 1989, 41.8% of children were employed, 35.7% were pursuing full-time education, and 14.6% were unemployed. By 1989, only 7% of the

sample continuing in full-time education were from the lower class. This relatively low level of presence of children of the lower classes in post-secondary education prompted the lament that:

> Unfortunately, it would appear that the massive expansion of educational opportunity at the secondary level which has occurred has done little to increase the 'permeability' of the Jamaican social structure and has probably not significantly enhanced the 'life chances' of lower class Jamaicans to enter the higher levels of the educational or occupational structure. (p. 157)

The Prospect of Change

Moral Economy—Need For a Theory of Caribbean Society

Transformation of education requires that the region revisit and reflect upon the kind of Caribbean society we wish to create, the values that the people must hold in common, and the basic principles we wish to live by and be known for. In short, transformation requires the articulation of a theory of Caribbean society that outlines the region's *moral economy*. We are fundamentally a constructed society, our forebears for the most part having been brought to the region involuntarily. Each of the countries has its own national ethos now—its own unique set of norms—and this far from Independence, its own socio-political and historical experience that defines the people. A failed attempt at federation is evidence of the strong pull of within-country nationalism. Within Guyana and Trinidad and Tobago there is the enduring question of race. It is difficult against this backdrop of separate nationalisms and identities to forge anything that we can point to as being peculiarly and coherently Caribbean. And yet this is what is required now in the region if we are to improve on our lot. Even if there is not political unity in the region, there can be moral or civic unity.

It is being recognized now that a large part of the Asian miracle in economic development turns on the tone of the respective societies, influenced by Confucian principles of harmony, and collectivism. In the case of the European Union,

philosopher Jürgen Habermas has stated that "Europe cannot just be based on common or political interests but also on some founding ideas and values" (cited in Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004). Modern German political economy reflects the theory of productive powers articulated by philosopher Freidrich List. Christopher Winch (1998) has examined List's influence on German modern thought and disposition to skill formation. He explains that List's theory of productive powers encompassed "all of the means by which a nation generates, preserves and develops its ability to produce" (p. 368). "Productive powers include habits, wider social relations and institutions, including education, morality and religion" (p. 370). Thus, according to List:

> Human capital consists not just in labour power as a form of physical strength, mental or manual skill or a combination of these, but as acquired habits and virtues of solidarity, discipline and self-discipline and other-regarding virtues such as courage, justice, charity etc…. A modern society has a state, a national identity, and institutions which support the society itself and its economic life. Religion and morality, as well as the law, provide the basis for the development of those virtues which make men likely to work diligently, to co-operate with others and to seek to improve both themselves and the products that they make. Institutions like trade and craft guilds, and the apprenticeships associated with them, embody the skills on which production rests; they also provide the possibility for nurturing and development of skills across generations, so that some skills may take generations to build up through refinement within a stable institutional base. (p. 370)

Winch explains that under a Listian approach, the development of productive powers is the primary economic concern. Here, economic policy is long-term in outlook, and general education and levels of skill in the population are increased. This sort of approach leads to "high skill equilibrium," where the interest of all are satisfied—workers, employers, consumers, and the State.

The point to be taken away here is that the vaunted German skill formation strategy is premised on a theory of German society. We see the same in Asia, where Confucianism prevails, and in the American mid-west, where so-called small-town values of self-help, cooperation, patience, and high degrees of order prevail. The longstanding societies have had centuries to fashion and practise the modes of thought that guide their actions. In the Caribbean, our history is more recent. But, as C.L.R. James points out, we brought ourselves. Thus, absent history and what we left behind, what do we do? I am suggesting here that there is need for articulation of a theory of what we must be, and that this can be set these forth as part of the necessary backdrop for education transformation.

The Unfinished Agenda of Educational Inequality

Errol Miller (2000) speaks of continuing unequal access to high-status education in the region, and Hickling-Hudson (2004) documents this in Jamaica. Throughout the region, there exists hierarchies of secondary schools that assume a pyramidal structure—a pyramid of inequality, such that the more valued is the education on offer the scarcer are the school places. This secondary provision logic extends into university education, where the places are scarce and those who attended the prestige high schools have better acceptance chances. The region as a whole has to come to terms with this problem of asymmetrical distribution of high-status education, since within it lies the root of some of the social discontent we see, as reflected in the crime statistics.

It is true that secondary enrolment rates are high generally, and that it is difficult to expand both quality and quantity of education at the same time. So-called prestige secondary schools in the region were established in support of a colonial logic of class distinction, race, and privilege. These schools were the preserve of the children of the elite. With Independence, class logic in the society unravelled, but these schools remained as agents of elitism, backed by a logic of scientism in the form of standardized tests. While national 11-plus examinations appear to be fair in their administration, they confer an advantage on children of the middle and upper classes, and from

intact families, over children of the lower classes, especially where they live in depressed urban or rural areas.

Prestige schools in the Caribbean remain so because of self-fulfilling prophesy. The children who do the best on exams are sent to these schools. Thus, they get the most attention, because they tend to be denominational and because of tradition. These, indeed, are the "sixth-form" schools for the most part. But what makes these schools great in our time are the students. Accordingly, one way to remedy this is by the upgrading of the schools that are now at the second and third tiers on a massive basis. If all schools are good, cream will rise in any case, and there will not be the pressure, as in the Trinidad and Tobago case, for students to get their "first choice." They would simply attend neighbourhood schools.

Expansion of Tertiary Education

Expansion of education has to extend to the tertiary level, where at the apex of the pyramid there has historically been room only for the best and the brightest as determined by success on A'Level examinations. In recent times, with the coming on stream of the University of Trinidad and Tobago (UTT) and the University of Technology, Jamaica, there is some easing of the pressure, but the data show that the shortage of places here is acute.

There is need in the region for a paradigm shift in the way we conceive of what university education is for, and what university education should look like. Indeed, there is need for the region to come to terms with the view that there can be different types of universities. For example, there could be a type of university that is devoted solely to scientific and technological knowledge. Another type could be devoted to technical careers. The critical paradigm shift that is needed is one where university education is viewed not as the preserve of a limited few, but for a much broader pool of citizens.

School Improvement and Quality Benchmarking

While there has been common secondary school-leaving examinations for children across the

Caribbean, such that all schools have a common curricular standard against which to measure the achievement of students, there is no such standard specifying the quality of schools. Thus, one dimension of transformation could be the establishment of benchmarks—quality standards—that can be used to design and evaluate schools. To have good schools and poor schools in the same system is to discriminate against those children whose fate is poor schools, and these tend to be the children of the common people.

If common quality standards are set for schools, and schools are subject to periodic inspection to see if they are in compliance with standards, the results would surely be that more children get a better quality education. In the US, the No Child Left Behind legislation includes criteria for school quality. Schools can fail if their children do not perform. Accreditation is a normal part of post-secondary educational provision in North America. For example, teacher education departments that are worth their salt typically wish to be evaluated by the National Council for Accreditation of Teacher Education (NCATE). NCATE sets forth a set of criteria that must be met, inclusive of quality of courses in the curriculum, reputation of faculty, graduation rate, and so on. Two-year technical and community colleges typically are accredited by external accrediting agencies. These agencies specify criteria such as the qualifications of instructors and the proportion of liberal studies in vocational programmes.

In the Caribbean, criteria could be set forth for schools, including benchmarks for space, physical amenities such as availability of water and toilet facilities, playground, school libraries, computers, health and safety, and science and technology facilities. Criteria could also extend to the quality of content taught, and quality of teachers.

Need for Innovative Spirit in Education

There is need in the Caribbean for a more inventive spirit in education at all levels. We are very conservative when it comes to educational provision. For example, many universities in the US accept Caribbean students on the basis of O'Levels. We are not quite there yet. Many US high schools offer summer programmes to help students who are falling behind. Typically, at least

in Trinidad and Tobago, summer is primarily a vacation period that probably is untouchable. During the regular school year, schools could be innovative in the scheduling of courses, for example, to facilitate students who are falling behind.

There is need for innovation in education that could see us building special high schools that are thematic in nature. For example, we could build science and technology high schools, or agricultural and fisheries high schools, to attract students who already have particular career inclinations. We can have sports high schools that are designed for athletically gifted students, who could perfect their prowess while studying academic subjects. We could build career academies that focus on technical themes that include a strong academic focus. We could have enrolment programmes that see high school students earning university credit while at school.

We have to invent Caribbean schools—that is, schools that make a statement about how we view education. Such inventions do not have to be system-wide.

Vocational Education and Entrepreneurship

Vocational education throughout the region should be academically inclined in the high school and job-focused beyond it. We should think expansively here about forms such education could take, inclusive of industry internships in summer or during the school year, job shadowing, and school-based enterprises (such as running school cafeterias). There is great need here for Caribbean-wide standards, and for a new ethic in this aspect of education that backs away from traditional imposition of academic stringencies. All vocational programmes beyond the high school should include a very substantial entrepreneurship component. More to the point, vocational programmes should be accompanied by incentives to graduates to form companies after graduating, such incentives to include easy access to venture capital that provides start-up money for getting technical companies established.

Role of Universities

UWI has played a critical role in the development of educational personnel in the region. In

particular, the B.Ed. degree has introduced a different model of teacher credentialling, one that should become the benchmark. UWI has been instrumental in the preparation of principals, as well as specialist teachers in early childhood education. In my view, the next frontier for the universities, particularly UWI, is in knowledge production around educational problems of the region. Research and evaluation in education should become mainstays of educational policy making, and all phases of educational delivery, including teacher education, access to schooling, school effectiveness, instruction, and learning.

Although there are many active and successful educational researchers in the region, whose work appear in the major research journals, we have not had consistent and focused programmes of work aimed at resolving important challenges. The Caribbean remains virgin territory here. Stakeholders such as scholars, teachers, policy makers, and members of the community could collaborate to arrive at frameworks that could drive research and evaluation. Out of such frameworks could emerge problems to be studied. A fruitful area could be existing databases relating to student achievement on national or Caribbean-wide examinations. Many problems come to mind, such as: What factors predict success for secondary schools in the CXC? What reading strategies work best in our primary schools? What mathematics teaching strategies work best? What do effective teachers in our primary and secondary schools do in their classrooms? What misconceptions do children bring to the classroom that impede their learning of various subjects? Is spoken Creole an impediment to written language competence in our schools?

Bronfenbrenner (1977, 1986) suggests an ecological framework of child development and learning that is suggestive of lines we may take in our own framing. In this model, student learning and development depend upon a multi-layered, interrelated context of systems. Children are nested in these systems. The *micro-system* is the most intimate and includes the family, and extends to day-care and kindergarten personnel. The more supportive the relationships here the more the child thrives. Next is the *meso-system*, the relationship between institutions, home, day-care centre, and schools. The *exo-system* comes next with the influence of the community, neighbours,

and so on. Finally, there is the *macro-system*, from which ideological and social forces exert pressure. The suggestion from this model is that to understand children's learning and development, we must search for predictor variables among the systems in which children are nested. Bronfebrenner's model, along with others, can push us into thinking about frameworks for research that reflect our circumstances. We could draw on existing models, we could modify them to suit our purpose, or we can fashion our own.

In his essay "Independent Thought and Caribbean Freedom," Lloyd Best (1971) wrote that we in the Caribbean must engage in independent thought; such thought being the prelude to action. Since action presupposes theory, he suggested that we should set ourselves three tasks:

1. To fashion theory on which to base intellectual leadership

2. To conduct the enquiry on which theory can be based

3. To transmit results to the community

Education is one of the areas in the Caribbean where the need for this interaction between theory and research is most urgent. Universities can help the society resolve controversies or areas of contention by being a neutral and objective voice. If we do not seek to fashion our own theory, or to modify existing theory to our own designs, and if we do not conduct research ourselves, then we are at the mercy of outsiders who, though well meaning, might not have the requisite folk knowledge needed to ask questions of local significance, or to give meaning to findings at which they arrive.

Conclusion

I have attempted to argue in this paper that education in the Caribbean has to be set against the backdrop of a theory of Caribbean society. History has always framed the way in which we think about education, but we are at the stage now where looking across is more fruitful than looking back. I have set forth basically two kinds of ideas relating to transformation—one *evolutionary*, that speaks of improving upon that which we already

have in place, and *revolutionary*, that requiring paradigm shifts in the way we think about educational provision. We have to build on what we have already accomplished in education. Thus, one dimension of transformation relates simply to quality improvement. But we also need to be inventive, such as by creating new types of educational institutions that are peculiarly ours, and by finding new ways to organize schools. I have also said here that research must become a more central part of educational discourse and decision making in the region, and that the universities have a major role to play here, in addition to critical roles they already play. I began this paper by asking if the people of the region are ready for and capable of change. It is my view that we are, most certainly, since it should be evident that education has been the driving force behind the great strides countries in the region have made in improving the well-being of their people.

For inspiration in effecting educational transformation in the region, we could look to those whose creativity and artistic giftedness has drawn the attention of the world to who we are and what we can be. I speak here of the talent of Hasley Crawford, Bob Marley, Louise Bennett, Winifred Atwell, Boogsie Sharpe, Vidia Naipaul, Garfield Sobers, Dwight Yorke, Sonny Ramadhin, Ellie Mannette; Peter Minshall, Kitchener, and, of course the prince, Brian Lara.

References

Ashton, D., & Green, F. (1996). *Education, training and the global economy*. Cheltenham, UK: Edward Elgar.

Ashton, D., Sung, J., & Turbin, J. (2000). Towards a framework for the comparative analysis of national systems of skill formation. International *Journal of Training and Development,4*(1), 8–25.

Baker, D. P. (1993). Compared to Japan, the U.S. is a low achiever...really: New evidence and comment on Westbury. *Educational Researcher, 22*(3), 18–20.

Berliner, D. C. (2006). Our impoverished view of educational research. *Teachers College Record, 108*(6), 949–995.

Best, L. (1971). Independent thought and Caribbean freedom. In N. Girvan & O. Jefferson (Eds.), *Readings in the political economy of the Caribbean* (pp. 7–28). Mona, Jamaica: New World Group.

Bils, M., & Klenow, P. J. (2000). Does schooling cause growth? *The American Economic Review, 90*(5), 1160–1183.

Bonal, X. (2007). On global absences: Reflections on the failings in the education and poverty relationship in Latin America. *International Journal of Educational Development, 27*(1), 86–100.

Bouder, A. (2003). Qualifications in France: Towards a national framework. *Journal of Education and Work, 16*(3), 347–356.

Bowles, S., & Gintis, H. (2002). Schooling in capitalist America revisited. *Sociology of Education, 75*(1), 1–18.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513–531.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*, 723–742.

Campbell, C. C. (1997). *Endless education: Main currents in the education stystem of modern Trinidad and Tobago 1939–1986*. Cave Hill, Barbados: The Press UWI.

Carnevale, A. P., Gainer, L. J., & Meltzer, A. S. (1988). *Workplace basics: The essential skills employers want.* San Francisco, CA, Jossey Bass.

Clarke, L., & Winch, C. L. (2006). A European skills framework?—but what are skills? Anglo-Saxon versus German concepts. *Journal of Education and Work, 19*(3), 255–269.

Coates, D. (2000). *Models of capitalism: Growth and stagnation in the modern era.* Cambridge, UK: Polity Press.

Friedman, T. (2005). *The world is flat: A brief history of the twenty-first century.* New York: Farrar, Straus & Giroux.

Gamaron, A. (2001). American schooling and educational inequality: A forecast for the 21st century. *Sociology of Education* (Extra Issue), *7*, 135–153.

George, J., Mohammed, J., & Quamina-Aiyejina, L. (2003). Teacher identity in an era of educational reform: The case of Trinidad and Tobago. *Compare, 33*(2), 191–206.

Gordon, B. (1987). Research news and comment: Cultural comparisons of schooling. *Educational Researcher, 16*(6), 4–7.

Green, A., & Sakamoto, A. (2001). Models of high skills in national competition strategies. In P. Brown, A. Green, & H. Lauder (Eds.), *High skills: Globalization, competitiveness, and skill formation* (pp. 56–160). Oxford: Oxford University Press

Hanushek, E. A., & Kimko, D. D. (2000). Schooling, labor-force quality, and the growth of nations. *American Economic Review, 90*(5), 1184–1208.

Hickling-Hudson, A. (2004). South-South collaboration: Cuban teachers in Jamaica and Namibia. *Comparative Education, 40*(2), 289–311.

James, C. L R. (1980). The making of the Caribbean people. In *Spheres of existence: Selected writings* (pp. 172–190). London, Allison & Busby.

Jennings, Z. (1993). Curriculum change in school systems in the Commonwealth Caribbean: Some implications for the management of curriculum development. *International Journal of Educational Development*, *13*(2), 131–143.

Jennings Z. (2001). Teacher education in selected countries in the Commonwealth Caribbean: The ideal of policy versus the reality of practice. *Comparative Education*, *37*(1), 107–134.

Keating, J. (2003). Qualifications frameworks in Australia. *Journal of Education and Work*, *16*(3), 271–288.

King, K., & Rose, P. (2005). Transparency or tyranny? Achieving international development targets in education and training. *International Journal of Educational Development*, *25*(4), 362–367.

Levin, H. M. (1998). Educational performance standards and the economy. *Educational Researcher*, *27*(4), 4–10.

Lewis, T., & Cheng, S-Y. (2006). Tracking, expectations, and the transformation of vocational education. *American Journal of Education*, *113*(1), 67–99.

Lloyd, C., & Payne, J. (2005). A vision too far? Mapping the space for a high skills project in the UK. *Journal of Education and Work*, *18*(2), 165–185.

London, N. A. (1997). Socio-politics in effective curriculum change in a less developed country: Trinidad and Tobago. *Curriculum Inquiry*, *27*(1), 63–80.

London, N. A. (2003). Ideology and politics in English language education in Trinidad and Tobago: The colonial experience and a post-colonial critique. *Comparative Education Review*, *47*(3), 287–320.

Miller, E. (2000). *Education for all in the Caribbean in the 1990s: Retrospect and prospect* (EFA in the Caribbean: Assessment 2000. Monograph Series No. 19). Kingston, Jamaica: UNESCO.

Miller, E. (2002). Educational reform in the Commonwealth Caribbean: An assessment. In E. Miller (Ed.), *Educational reform in the Commonwealth Caribbean*. Retrieved from http://www.iacd.oas.org/Interamer/miller.htm

Nyhan, B., Cressey, P., Tomassini, M., Kelleher, M., & Poell, R. (2004). European perspectives on the learning organization. *Journal of European Industrial Training*, *28*(1), 67–92.

Porter, A. (1995). Research news and comment: The uses and misuses of opportunity-to-learn standards. *Educational Researcher*, *24*(1), 21–27.

Ramirez, F. O., Luo, X., Schofer, E., & Meyer, J. W. (2006). Student achievement and national economic growth. *American Journal of Education*, *113*(1), 1–29.

Reich, R. B. (1991). *The work of nations: Preparing ourselves for 21st century capitalism.* New York: Alfred A. Knopf.

Resnick, D. P., & Resnick, L. B. (1985). Standards, curriculum and performance: A historical and comparative perspective. *Educational Researcher*, *14*(4), 5–20.

Schoenfeld, A. H. (2002). Making mathematics work for all children: Issues of standards, testing, and equity. *Educational Researcher*, *31*(1), 13–25.

Schofer, E., Ramirez, F. O., & Meyer, J. W. (2000). The effects of science on national economic development, 1970–1990. *American Sociological Review*, *65*(6), 866–887.

Strudwick, J., & Foster, P. (1991). Origins and destinations in Jamaica. *International Journal of Educational Development*, *11*(2), 149–159.

Tilak, J. B. G. (2006). Post-elementary education, poverty and development in India, *International Journal of Educational Development*, *27*(4), 435–445. doi:1016/j.ijedudev.2006.09.018.

Thurow, L. (1992). *Head to head: The coming economic battle among Japan, Europe and America.* New York: William Morrow.

Turner, R. H. (1960). Sponsored and contest mobility and the school system. *American Sociological Review*, *25*(6), 855–867.

U.S. Commission on Civil Rights. (2005). *Economic stagnation of the black middle class.* Washington DC: Author.

U.S. Department of Education. National Commission on Excellence in Education. (19873). *A nation at risk: The imperative for educational reform.* Washington, DC: Author.

Winch, C. (1998). Two rival conceptions of vocational education: Adam Smith and Freidrich List. *Oxford Review of Education*, *24*(3), 365–378.

Young, M. F. D. (2003). National qualifications frameworks as a global phenomenon: A comparative perspective. *Journal of Education and Work*, *16*(3), 223–237.

PART 1

BEST PRACTICES IN INSTRUCTION

Subjectivist Methodology for Teaching French as a Foreign Language

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Abstract. This paper discusses the need for language learning methods designed to capitalize on the rich cultural diversity of students. It introduces basic subjectivist teaching principles and shows how these were successfully applied to the multi-ethnic, multi-ability, and multi-age teaching of French as a foreign language. The paper underlines the importance of language competence for social, economic, and political development within an increasingly globalized world. While the last quarter of the 20th century recognized the status of regional and Creole languages, the 21st century is set to place greater emphasis on the role of international languages for economic development and political integration. National education systems ought to respond to these new market-oriented political pressures by devising language curricula that maximize attainments for culturally diverse students in at least one foreign language. This is a commitment that has major pedagogical implications. To address this diversity, a culturally responsive language teaching approach is presented, which uses multimodal subjectivist techniques. These powerful techniques utilize student diversity and empower learners by enhancing positive subjective feelings of learning. The techniques are presented using examples from a subjectivist French as a foreign language lesson.

Introduction

This paper underlines the importance of language competence for social, economic, and political development within the increasingly globalized world. While the last quarter of the 20th century recognized the status of regional and creolized languages as fundamental tools for cultural recognition and social unification, the 21st century is set to place greater emphasis on the role of foreign languages for economic development and political integration. A major implication for national education systems is the need to devise language curricula that maximize attainments for all students, not only in their mother tongue but also in at least one foreign language. Providing quality language learning to large culturally and intellectually diverse student populations is a pedagogical challenge, which can be met through a culturally responsive subjectivist language teaching methodology. This paper presents such a methodology and shows how its integral, powerful, multimodal subjectivist techniques were successfully tested in a multi-ethnic, multi-ability, and multi-age French foreign language class.

Using Subjectivist Pedagogy for Enhanced Foreign Language Learning

Subjectivist language teaching is a psycho-pedagogical response to educational changes. It aims to provide empowering experiences for all students through engrossing learning tasks. Its main characteristics are described below.

Theoretical Stance of Subjectivist Language Pedagogy

Subjectivist language teaching is an application of Bastick's (1998; 1999a; 1999b, 1999c) "subjectivism" to language teaching. Subjectivism is an embodied cognitive theory (Brown & Reid, 2006; Niedenthal, Barsalou, Winkielman, Krauth-Gruber & Ric 2005), and subjective teaching is one of its applications to education (Bastick, 2003). Subjectivist teaching aims to enhance learning by utilizing the personal "subjective" feelings that accompany learning, that is, it uses affect-structured constructivist language methodology to emphasize feelings and emotions that increase cognitive learning (Kramsch, 1997;

Lozanov, 1979; McCarthy, Mejia, & Liu, 2000). Fundamental characteristics of multimodal language pedagogy are the indivisibility of *affect* and *cognition* of all learning experiences that occur in the language classroom. These methods utilize developmentally appropriate cognitive and affective activities and the use of techniques of "enculturation" for learner "empowerment" (Bastick, 2003, p. 210).

Enculturation is the process through which competent language users develop their linguistic skills and their sociocultural understanding. This enculturation is a natural process, which is enhanced in the classroom by designing learning activities that enable the language learner to rapidly internalize the culture of the subject (Jacobson, 1996). The use of enculturation techniques in the classroom is intended to sensitize the learner to the values inherent to the culture of the discipline.

Learner empowerment is the process by which the learner grows as a self-directed lifelong learner (Martinez, 2001). The process of empowerment is demonstrated by the learner's autonomy in choosing what best to learn and how best to learn it. To this end, the role of the language educator is to provide sufficient diverse learning experiences from which the learner can make informed decisions towards empowerment.

Triggering Needs-Driven Language Learning

The two theoretical principles of enculturation and empowerment are articulated in pedagogic activities designed to guarantee the learner's success (Salmon, 1996). These activities, called "surface purposes," range from simple rote-learning games to complex needs-driven social communication tasks. These surface purpose activities distract students' attention from the "pedagogic purpose" of the teacher by focusing the learner's awareness on the surface purpose of the activity. These activities use three subjectivist affect-structuring techniques. These are (a) an emotional anchor (for task-focusing); (b) a cognitive direction (for learner guidance); and (c)

a motivator (for activity engagement). These three techniques are demonstrated in the French foreign language class described below.

Utilizing Multimodal Subjectivist Pedagogy in a French as a Foreign Language Class

Subjectivist language pedagogy was successfully used in the experiential French foreign language class presented here.

Methodological Design

Participants. This multimodal experiential French lesson was taught to a multi-cultural, mixed-age, and mixed-ability class. The participants were 23 students and 3 adults from diverse ethnic and cultural backgrounds. The students were from Grades 9–13 of a local International School. It is important to stress that the multifaceted diversity of the participants is an exaggeration of the diversity found in traditional streamed, single-age classrooms. This extreme diversity is to show more clearly how subjectivist language pedagogy can be used to positively utilize the diversity that is found to be problematic in more traditional language classrooms.

The participants were divided into two proto-groups ("Conservative For" and "Green Against"), which were further divided into two smaller working sub-groups. The participants' division into four small groups of 5 or 6 was to optimize involvement and facilitate in-group convivial communication and inter-group competition.

Description of the learning situation. The context of the learning situation was the main setting for the lesson, followed by six integrated activities culminating in a "For vs. Against" debate and ballot on French nuclear testing in the Pacific. The methodological design for each activity is a mini-example of the methodological design of the whole lesson. The whole lesson was choreographed so as to maximize students' participation as befitting their varied levels of linguistic and cognitive development. One student

proto-group was encouraged to represent the Conservative party in favour of nuclear testing, whereas the other proto-group chose the ecological Green party and were against nuclear testing. Students wrote their names on iconic labels and wore them to enhance identification with their roles.

Identifying the surface and pedagogic purposes. The culminating surface purpose of the lesson was a debate and a ballot on nuclear testing. This surface purpose was chosen because learners were self-motivated by the opportunity to express their disapproval of nuclear testing. The personal involvement and strong feelings of the French learners in this newsworthy topic were utilized for the initial setting of the lesson, which consisted of the main *emotional anchor*—to hold their emotion for the duration of the lesson; the main *motivator*—making them want to participate, showing them how to participate, and confirming that they can successfully do so; and the *cognitive direction*—carrying the motivation into showing them how to start.

The *emotional anchor* was a commercial video news clip of an official spokesperson, a General, supporting arguments on nuclear testing and showing the bomb blast rupturing their peaceful South Pacific paradise. This was chosen as the highly arousing emotional anchor for the lesson because it was a current news issue about which all students had recently demonstrated and about which they felt vehemently abhorrent. An interview with a popular member of the class had been edited into the prepared video of the official pro-spokesperson as a motivator with which students readily identified, implying that they had an equal public voice and right to speak, and the ability to successfully speak publicly on the issue. The *cognitive direction* was the simplifying stark question "Pour ou Contre les essais nucléaires" [For or Against nuclear testing] suddenly presented in a different black and white medium to call them back to imminent action.

The pedagogic purpose was to learn and practise an argument register in French. This was articulated through six language activities, such that each was a supporting foundation for the next, namely, (a) headlining a news article, (b) listing arguments For or Against, (c) selecting one's argument, (d) phrasing one's argument as a question, (e) presenting one's argument, and finally (f) expressing one's true opinion on the issue of nuclear testing. These six communication-driven activities aimed at the integrative use of the four language skills of speaking, listening, reading, and writing through the cooperation-directed design, that is, by encouraging individual contributions, practising them, and bringing each individual's contributions together in small groups before having them appreciated by the whole class. The pedagogical purpose of this experiential French class was achieved when each participant presented his or her argument at the level of complexity reflecting his or her maximum linguistic and cognitive competence. The following description of the six integrative language activities shows how both the surface purposes and the pedagogical purposes were achieved.

The Six Integrative Multimodal Activities

The surface purpose for each activity utilized a feasible and energizing communicative role-play. The description of these activities is intended to show how this energy of the class is choreographed and how needs-driven communication is privileged. These brief descriptions of the six constituent activities are organized by (a) presenting the setting, (b) describing the surface purpose, and (c) describing the hidden pedagogic purpose for each activity. Each description is followed by an explanation of the methodological design for the activity. This affords six illustrative explanatory examples of the application of multimodal subjectivist methodology to foreign language teaching. As the methodology for each activity is a mini-version of the methodology of the whole lesson, the setting for each activity comprises an emotional anchor,

motivator, and cognitive direction with the same functions as those in the main setting.

Activity 1: Headline that article

Setting: Each group of participants is a small group of investigative journalists working in a Paris news office.

Surface purpose: As investigative journalists, the learners need to find a suitable headline for a news article. When the students have decided on a headline for their group, they put it on the editor's desk, simulated by the teacher's overhead projector.

Pedagogic purposes: (a) practising reading French for understanding to a socially-defined standard, (b) communicating to agree on a one-line headline for their group, and (c) practising and learning relevant lexical register.

Methodological design of the activity: In this first activity, the teacher suggests party membership. A balance of ability is necessary in each group, and both proto-groups include participants from different ability levels. Participants from each proto-group choose one of the two sub-groups, but subtle changes are encouraged to ensure a balance of ability between sub-groups. Abilities needed for this activity are an intermediate level of French to summarize the article, a high level of French to confirm the authenticity of the summary against the original article, and a low level of French to suggest headlines and choose the "best" headline.

The implicit requirements of this activity encourage relevant communication in the groups and ensure needs-driven communication. Practice slips are provided so that students can try out a headline before committing the group to one answer. The same article is given to each group so that the contributions can be compared. This implicit comparison uses the same energy for completion that is generated in the groups, and it also gives implicit feedback on the quality of the

group's efforts. Note that empowerment comes from peer recognition and never from teacher approval. In particular, the least able need and receive high empowerment. In this activity, the students with the least ability have equal "power" to judge the work of the most able. The teacher is careful to maintain participants' empowerment and the potential of each contribution being the best by avoiding giving "authoritative" comparative evaluations of the groups' contributions.

Activity 2: List arguments "Pour ou Contre"

Setting: Each group of participants is a small group of political researchers working for potential spokespeople (ministers), as in the party's research office.

Surface purpose: The less proficient participants have to find and discuss arguments to give to their most proficient group members, who are to represent them as official party spokespeople. The group members also need to be aware of what counter questions "journalists" might ask against their arguments.

Pedagogic purpose: Further practice of skills introduced in the first activity and integrative use of the four language skills.

Methodological design of the activity: The pedagogical purpose is the same as in Activity 1. However, rather than by extending Activity 1, for example, by giving more articles to headline, the energy of the class is intensified by recasting the pedagogic purpose in a different surface purpose, This difference in surface purpose was enhanced by physically transforming the workstations from "newsrooms" to "party research offices," and by arranging the party membership so that all students physically moved to different workstations. This physical re-positioning was unnecessary for the pedagogic purpose and was included to enhance the surface activity. Notice again that the least proficient have high

empowerment by choosing arguments for the most proficient to present as their spokespersons. The arguments "for" and "against" were then summarized and listed on sheets provided. This was an open-ended activity—it could have gone on indefinitely. It was stopped when the energy of the class was at the highest—even though all arguments, or even the best arguments, may not have been recorded. The atmosphere was choreographed to give a sense of urgency— building to the controlled climax of the ballot result, in the same way as the media build the climax to an election result. To add to this affective energizing "urgency," the next activity, Activity 3, was cut short by an "unexpected" event, which was itself cut short by Activity 4, the live TV debate.

Activity 3: Choosing your arguments

Setting: At the party central office. Each party member chooses an argument with which he or she feels comfortable. Then, he or she agrees with the party leader to one or two roles—to be the official party spokesperson for this argument, and/or to be an investigative journalist, using his or her argument in the form of a question to ask the opposition at the time of the debate.

Surface purpose: Party leaders agree on who should be the official party spokespersons for the various arguments in the coming debate, and prepare journalists with challenging questions for the Opposition. Each spokesperson has to choose an argument that he or she can repeat in the TV debate, and which the most able can defend when questioned by opposing journalists.

Pedagogic purpose: To focus the learners on smaller content areas in which they can achieve high mastery level and inevitable success/ empowerment, as judged by social/peer approval from the whole class.

Methodological design of the activity: This activity builds on the previous activity. It is a larger group activity, in that the two previous sub-groups from the last activity re-combined into one proto-group for this activity. Students bring and share their lists from the previous activity. The surface purpose motivation for this activity is that it is an administrative necessity to prevent duplication of arguments in front of the media, that is, each student has to have his or her own argument. In addition, for the debate, the party leader needs to know whom to call as a spokesperson for each argument. These administrative difficulties are utilized by the surface purpose of a party needing only one official spokesperson for each argument, and for the leader needing to agree to this. So, within the surface purpose, the leader confirms each participant's written choice of argument or question for the next activities. Having the arguments and questions written also gives participants the security of being able to always refer to their written record. Within the surface purpose, this record acts as a confirmation record/contract of their assigned role as official party spokesperson or journalist. Although each participant can choose the argument with which he or she feels most comfortable, it is in the party's interest that the lower-ability students are given preference of choice and "coached" by party members of higher ability. This ensures peer-teaching within needs-driven communication for this activity. When the energy peaks, this activity is interrupted by a fourth "surprise" activity.

Activity 4: Interviewing the whistle-blowers

Setting: Learners, in their roles as journalists, have a tip-off to go to a warehouse and to a hotel room for inside information that might help them win the coming debate. The classroom is thrown into darkness, lit only by lights on the faces of each "whistle-blower" at opposite corners of the room.

Surface purpose: Anonymous party defectors are willing to "spill the beans" and divulge confidential information about nuclear testing at

the last moment before the debate. This can help investigative journalists to expose the official spokespeople who support (or oppose) nuclear testing during the coming live TV debate, by asking the "right" questions.

Pedagogic purpose: The whistle-blowers, and where necessary their aides, are chosen from reasonably competent speakers so that the participants can, by phrasing their argument as a question, both practise and hear French relevant to increasing their mastery of their chosen content, further guaranteeing their public success in the imminent debating activity.

Methodological design of the activity: To enhance the emotional change between surface activities, the change was rapid—to take advantage of this unexpected opportunity—the classroom went from light to semi-darkness. The intimate setting of the warehouse and hotel room workstations in the darkened room contrasted markedly with the open setting of the last activity. This activity is duplicated in two medium-sized groups to give the students double the opportunity to practise and hear relevant French lexicon. This is achieved by having the two workstations—a warehouse and a hotel room—at opposite corners of the classroom so that the "sound" is separate. The journalists then move as they choose between the two sites. Two smaller groups were chosen rather than one large group so that all students would be able to speak more spontaneously to a whistle-blower. Again, at the height of the class energy, this activity is also cut short, simply by switching on the lights to destroy the emotional ambience of the warehouse and hotel room settings, rather than by explicit instructions that would threaten the participants' autonomy. This is done by changing the lighting and sound in preparation for the TV debate.

Activity 5: The live TV debate

Setting: A TV studio with a presenter/compère (the teacher), an expert panel of the two party leaders, and their aides who will call their official spokespeople, in front of the audience of investigative journalists.

Surface purposes: (a) the participants, as spokespeople, have to convince the TV viewing public (the rest of the class not currently debating) of their party's point of view, *Pour ou Contre les essais nucléaires dans le Pacifique*; and (b) the participants, as investigative journalists in the audience, have to represent the viewing public, by asking searching questions of the official spokespeople, possibly exposing any hidden agenda as intimated by the whistle-blowers.

Pedagogic purpose: To experience the greatest success/empowerment, in terms of social/peer approval of the whole class, by publicly demonstrating their practised competence at a high level of mastery in support of their shared endeavour.

Methodological design of the activity: Loud cacophonous music and bright lighting mark the change of activity. The loudness of the music encourages informal chatter amongst the students. The need for a "television" camera accommodated the use of the camera making a research record of the lesson. The teacher, in her role as compère, reminds the leaders that they can advise their spokespeople of official party policy, if they think it is necessary. This uses the surface purpose to enable the higher-ability students to help the lower-ability students in a "win-win" situation, ensuring success. The role of the compère/commentator allows the teacher some control hidden under the surface purpose, inter alia, to encourage the students and, subtly, to correct and simplify the students' French expression for the other students. This is achieved under the guise of explaining for the "less knowledgeable" viewing public.

This activity is designed to ensure that every student experiences maximum success of learning to the limit of his or her ability. The minimum any student is expected to do is simply to repeat his or

her argument as it is written on the sheet they have carried since the third activity, and that they have practised in the fourth activity. Hence, every student can successfully fulfil the requirements of the surface purpose. Some higher-ability students have confidently discarded their written sheets and are ready with investigative questions. What drives the students to speak to the limit of their ability is their involvement in the surface purpose. Their need to communicate is greater than their accuracy in using their new learning. Thus, the teacher has to be skilful and sensitive in maintaining the effectiveness of the pedagogic purpose (accuracy), while maintaining such a high emphasis on the surface purpose that the pedagogy used to meet the objectives (i.e., to learn and to practise argumentation in French) remains totally below the students' awareness. To this end, two techniques are employed in this activity to ensure that the surface purpose remains paramount, while best achieving the invisible pedagogic purpose. The first technique is to model the standard of skills required, whereas the second technique is to allow some inaccuracies compatible with the students' needs, even to the extent of allowing some English intrusions.

Activity 6: The ballot

Setting: A French polling station where everyone casts his or her vote *"Pour ou Contre les essais nucléaires dans le Pacifique."* A ballot box is on the table.

Surface purpose: To ascertain the public's opinion—the winners of the debate.

Pedagogic purpose: Throughout the lesson, it was necessary for the learners to support arguments to which they were opposed. This ballot resolves any dissonance that may have arisen; first, by allowing the learners to vote for their true opinion, and, then, by rewarding them for their participation in the lesson by giving them the result they all want, that is, to express their disapproval of nuclear testing in the Pacific—this

outcome fulfils the surface purpose of the lesson and resolves their intrinsic motivation to take part. The ballot also gives opportunities to further enculturate students by demonstrating how the French vote. This cultural addition is made relevant to the lesson by the surface purpose ballot activity chosen to close the lesson.

Methodological design of the activity: This last activity has three major functions. First, it is intended to influence positively any re-constructed memory of the lesson. Secondly, it is expected to motivate further learning. Thirdly, it acts as a debriefing bridge between the illusion of the surface purpose and the reality of the lesson's end. The purpose is to de-emphasize the students' roles in the surface purpose and, simultaneously, to raise their awareness of having been successfully and enjoyably learning French language and culture. A cultural insight into French voting is given in this last activity. Students cast their votes. The votes are then separated into those "for" and those "against" and counted in French. The students finally choose one student to announce the result of the ballot. As it is expected, the students naturally choose whom they consider to be the most deserving student—the one who will benefit from the most empowerment. The lesson ends with their chosen student proclaiming the result, which is the needed *"Contre,"* result, to the applause of class peer approval for her. This grand finale also signals the official end of these enculturation and empowerment activities.

Evaluating the Pedagogical Success of the Subjectivist French Language Class

Qualitative and quantitative student feedback is used to improve teaching and learning (Alvarez, 2001; Shepard, 2000) rather than merely assess the obvious improvements in language use, which can be done more rigorously by traditional language testing. The success of subjectivist teaching is in the degree of empowerment and enculturation engendered by the activities. An indicator of this success is students' lack of awareness of the

pedagogic purposes and teaching methodologies used to achieve them. To this end, the students who participated in this Enhanced French language class were asked to state what they liked or disliked, and to rate their liking on a 10-point scale. Content analysis of the students' evaluative feedback showed that the lesson was very successful in that no reference was made to any of the pedagogic purposes or teaching methodologies as described above. The feedback students gave only referred to liking or disliking aspects of their experiences within the surface purposes. The content analysis showed that the students were totally engrossed in the surface purposes of the lesson and no attention was given to the pedagogic purposes or methodologies. For example, it was not unexpected that the most prevalent dislike came from the students who were required to speak vehemently and convincingly against their own beliefs. As shown in the students' lesson feedback, this French language class, through its multimodal subjectivist techniques, engaged all students in collaborative learning tasks.

Conclusion

This paper presented aspects of a foreign language pedagogy, which employ multimodal subjectivist strategies for promoting needs-driven collaboration and inter-communication between culturally and cognitively diverse students. It showed how subjectivist affect-driven strategies, derived from embodied cognitive psychology, were used effectively to empower highly diverse students to communicate through French as a foreign language and to enculturate them into the accompanying values and attitudes of French culture. It is suggested that national education systems can employ such methods to unlock the potential of students to reach the competences required regionally and globally in foreign languages.

References

Alvarez, M. C. (2001, April). *A professor and his students share their thoughts, questions and feelings.* Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA

Bastick, T. (1998, November). *Constructivist pedagogy and student-centered learning: The subjectivist paradigm.* Paper presented at the 8th Annual Conference of the Institute for the Study of Postsecondary Pedagogy – Creating Alternative Learning Cultures: Culture, Cognition and Learning, Ellenville, NY.

Bastick, T. (1999a, January). *Subjectivism – A learning paradigm for the 21st century.* Paper presented at the 3rd annual North American Conference on the Learning Paradigm, San Diego, CA.

Bastick, T. (1999b, May). *Subjectivist psychology: An affective-constructivist pedagogy.* Paper presented at the annual meeting of the Western Psychology Association, Irvine, CA.

Bastick, T. (1999c, July). *Enculturation and empowerment in the subjectivist classroom.* Paper presented at the 9th biennial conference of the International Study Association in Teachers and Teaching, Dublin, Ireland.

Bastick, T. (2003). Subjectivist psychology and its application to teaching. In T. Bastick (Ed.), *Education theory and practice* (2nd ed.; pp. 209–218). Mona, Jamaica: Department of Educational Studies, UWI.

Brown, L., & Reid, D. A. (2006). Embodied cognition: Somatic markers, purposes and emotional orientations. *Educational Studies in Mathematics 63*(2), 179–192.

Jacobson, W. (1996). Learning, culture, and learning culture. *Adult Education Quarterly, 47*(1), 15–28.

Kramsch, C. (1997). Culture and constructs: Communicating attitudes and values in the foreign language classroom. In P. R. Heusinkveld (Ed.), *Pathways to culture* (pp. 461–486). Yarmouth, ME: Intercultural Press.

Lozanov, G. (1979). *Suggestology and outlines of Suggestopedy*. New York: Gordon & Breach.

Martinez, H. (2001). Autonomie: Une question d'interdépendance entre apprenants et enseignants [A question of inter-dependence between teachers and learners]. *Les Langues Modernes, 95*(1), 26–33.

McCarthy, C., Mejia, O., & Liu, H. T. (2000). Cognitive appraisal theory: A psychoeducational approach for understanding connections between cognition and emotion in group work. *Journal for Specialists in Group Work, 25*(1), 104–121.

Niedenthal, P. M., Barsalou, L., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review, 9*(3)*,* 184–211.

Salmon, H. (1996). The case for a modified pedagogy in the foreign language classroom. In D. Craig (Ed.), *Education in the West Indies: Developments and perspectives, 1948-1988* (pp. 269–280). Mona, Jamaica: Institute of Social and Economic Research, UWI.

Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4–14.

Constructivism and the Enabling of Mathematical Thinking

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Abstract. The way mathematics is taught in many Caribbean classrooms often hinders the development of mathematical thinking skills and the attainment of mathematical understanding. This paper puts forward the view that the essential task of mathematics teachers is to enable the construction of meaning in order to facilitate their students' mathematical thinking and mathematical understanding. The paper argues the view that mathematics is not something that exists "out there" but, rather, is an activity that is socially constructed and validated. Findings of research conducted in Jamaica in two Grade 8 mathematics classrooms, where two teachers implemented thinking-focused pedagogy grounded in social constructivist ideology, are discussed, in an attempt to demonstrate how they used strategies that were aimed at the construction of meaning through access to mathematical ideas and the attainment of mathematical understanding. The paper argues that the use of such teaching approaches can fundamentally change the face of mathematics education in Caribbean schools.

Introduction

A key objective in every mathematics classroom should be the enabling of mathematical thinking— a construct defined by Bell-Hutchinson (2004) as the ability to think critically within a mathematical domain. In most Caribbean countries, however, mathematics classrooms are characterized by rote teaching where the emphasis is on drill and practice, rehearsed algorithms, the memorization of facts and formulae, and the regurgitation of rules. Students are not typically encouraged to question, to explore, to examine open-ended situations, and to engage in creative thinking. As such, any mathematical knowledge that is attained by students tends to remain "fragile" and often unusable outside of the context within which that knowledge was gained. Evidence of the "fragility" of the knowledge gained is seen in our annual CXC results.

Table 1. Percentage of Candidates Gaining Grades I And II in Mathematics (General Proficiency) in the Caribbean Secondary Education Certificate (CSEC) Examinations, 2002–2006

	2002	2003	2004	2005	2006
Antigua and Barbuda	14.59	10.42	13.8	15.26	13.86
Barbados	25.12	21.26	22.23	25.57	20.32
Grenada	5.77	11.63	11.19	11.95	11.54
Guyana	10.55	9.18	11.78	15.34	10.89
Jamaica	14.01	10.38	8.4	13.83	11.84
St. Vincent and the Grenadines	19.5	13.22	13.74	14.34	9.86
Trinidad and Tobago	37.39	24.42	25.24	25.32	21.69

This paper argues that mathematics classrooms in the Caribbean could be radically transformed if teachers focused more on meaning-making by emphasizing mathematical thinking and mathematical understanding. In so doing, emphasis would not only be placed on procedural facility, but also on "deep learning" of mathematical ideas. By deep learning, I refer to the ability of the learner to build connections between current learning and previous knowledge in such a way as to utilize this newly found knowledge in flexible ways to solve problems. I further argue that this meaning-making can be achieved through the use of teaching approaches that are underpinned by a constructivist philosophy about how mathematics is learnt.

The Nature and Development of Mathematical Thinking

An exploration of the literature will reveal that mathematical thinking is defined in many different ways. Indeed, there seems no common viewpoint as to what it is. As used in this paper, therefore, mathematical thinking refers to the use of critical thinking skills within a mathematical domain. Such skills include, but are not limited to, the use of mathematical processes such as specializing, generalizing, conjecturing, testing, justifying, and verifying. All these processes depict various kinds of mental activity, an observation made by Watson and Mason (1998). However, I do not use the term to include such mental activities as calculating, recalling formulae, or simply thinking about mathematics. Rather, mathematical thinking as defined here is a meta-activity requiring the use of higher-order mental processes.

Other kinds of actions that depict the use of mathematical thinking include the ability to:

- identify similarities beyond superficial appearance;
- use prior knowledge in making connections within mathematical situations;
- create own methods;
- generalize a structure from a diagram or from examples;
- choose an appropriate technique from a variety
- deal with unfamiliar problems
- change one's mind in the face of new experience.

(adapted from Watson, cited by Bell-Hutchinson, 2004, p. 84)

I subscribe to the notion that learning to think mathematically also requires the development of an intrinsic *desire* to engage in mathematical activity and to *value and use* the processes of mathematization (Schoenfeld, 1994). This seems an important point to emphasize because what we should be aiming for in our quest to change the face of mathematics education is not just book knowledge, but also an overall positive orientation for the learning of mathematics. I would therefore add that the more confident a learner is and the more competent in the mathematical content a learner is, the richer the mathematical thinking experience process will be.

Mathematical Understanding

In discussing mathematical thinking, it is also necessary for us to examine the notion of mathematical understanding because the perspective that this paper assumes supports the notion that these two constructs exist within a kind of symbiotic relationship. Any attempt to promote one will, as a natural consequence, facilitate the development of the other, and new understandings emerge as mathematical thinking is exercised. But an exploration of the literature reveals numerous definitions of this concept. The scope of this paper does not allow for an exegesis on these various definitions, but it is important to state that mathematical understanding, as used in this paper, is synonymous with *conceptual understanding*. I also believe that mathematical understanding resides along a spectrum from not understanding at all to 100% understanding—the purist form of understanding that will normally remain elusive to achieve. Whatever the definition and however we view mathematics, a central objective in the mathematics classroom is for students to "understand" what they learn in such a way that their knowledge can be used flexibly, adapted to new situations, and used to learn new things (Hiebert et al., 1997, p. 1).

How do we detect, then, when our students have attained some level of mathematical understanding? Learners who have gained mathematical understanding will be able to demonstrate more than a superficial knowledge of what they are learning. For example, they will not

only be able to recite a rule, "take it to the other side and change the sign," or a formula, area = length x width, but will be able to explain why these processes work. As Watson (2002) argues, "understanding requires more than rote-learning or following procedures correctly" (p. 163). In summary, when mathematical understanding has been attained, some expected outcomes are that the learner:

- is able to make connections with previously learned concepts;
- can use mathematical knowledge in flexible ways;
- can typically explain the "whys" of algorithmic procedures; and
- can use their understanding to gain new understandings (learn new things).

Social Constructivism, Mathematical Thinking, and Mathematical Understanding

The principal tenet of social constructivism is the belief that mathematical knowledge is socially constructed and validated (Neyland 1995). The theory acknowledges that both social processes and individual sense-making have central and essential parts to play in the learning of mathematics (Ernest, 1994). As such, classrooms that operate within the social constructivism paradigm are typified by social interactions— students with students and students with teachers.

Yet, while the constructivist view of learning provides a valuable framework for thinking about the learning of mathematics, Simon (1995) reminds us that it does not really tell us *how to* teach mathematics. In other words, it does not stipulate a particular model. At best, we can only use the ideas emerging from constructivism to assist in developing and testing various models of teaching, and depend on more research in mathematics pedagogy to provide examples of such models. We also have to continuously examine constructivist thinking in mathematics education in order to assess the extent to which frameworks that are developed do result in mathematics pedagogy which brings *desirable* effects in the mathematics classroom.

However we look at it, there seems to be a commonly accepted notion that mathematics

teaching has much to benefit from constructivism, and Nickson (2006) has captured well the three major implications of a constructivist approach for the effective teaching and learning of mathematics.

Firstly, children can no longer be seen as simply "receivers" of knowledge. Freire (2002) suggests that this is a "banking" concept of education in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits" (p. 72). He argues that this type of education is oppressive and negates education and knowledge as processes of inquiry. Rather, students must be considered as active *makers* of knowledge. This means that they must be "actively engaged in selecting, absorbing and adjusting what they experience in the world around the world" (Nickson, 2006, p. 5), in light of their new experiences. According to Nickson, the logical implication of this is that to learn mathematics, children have to be placed in situations where they have to mathematize and so be involved in *doing* it (p. 5, emphasis added).

The second implication is that students need to experience mathematics in contexts other than a purely mathematical one: "In order to make sense of the mathematics they meet in school, to access it and make it their own, they have to link it with the reality of their world and what they already know" (Aubrey, 1993, cited by Nickson, 2006, p. 5).

Finally, Nickson (2006) suggests that each child's contribution in a mathematics lesson needs to be acknowledged and considered, not just by the teacher but by other members of the class.

The three implications highlighted above essentially point to one major implication—that mathematics teaching must be linked to meaning-making and must be removed from the traditional view of it being "out there," totally alienated from the lives of learners and comprising of nothing but rules to be learnt.

Making Meaning in the Mathematics Classroom

By using the term *meaning making*, I refer to the effort of the teacher to enable learners to make connections with the subject matter in such a way that the learners are able to fit any new knowledge gained into their personal existing schema.

Further, the process of meaning-making requires that learners be enabled to see mathematics as a very human activity that can be changed over time as new knowledge emerges. The view of there being only one "single, convergent and acceptable response" (Aubrey, 1993, cited by Nickson, 2006, p. 5) is not the dominant view in a class where meaning-making is paramount. Essentially, then, making meaning in the mathematics classroom focuses on the learner, involves dialogue, and emphasizes conceptual understanding.

It would be difficult to go further without acknowledging the work of Vygotsky (1978), who could be considered the father of social constructivism. The process of meaning-making previously discussed rests well with a Vygotskyan view of learning, and it is well accepted that social constructivism emanated from his work. Vygotsky placed much emphasis on the social dimension of learning and highlighted the impact of the social environment of the child on learning. From his perspective: "every function in the child's cultural development appears twice; first on the social level, and later on the individual level; first, between people (interpsychological), and then inside the child (intrapsychological)" (p. 57). He contended that learners can attain two levels of performance—one, when unassisted, and the other, when assisted:

> An essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of developmental processes that are able to interact only when the child is interacting with people in his environment and in collaboration with his peers. (Vygotsky, 1978, p. 90)

In order to facilitate this meaning-making, then, teachers must provide a learning environment that provides students with opportunities to:

- see mathematics as more than a rigid set of rules;
- explore mathematical ideas individually, with the teacher and with peers;
- develop a propensity for inquiry; and
- use their existing schema to generate new understandings.

In establishing such an environment, students must be allowed to gain ownership of their mathematical learning by being encouraged to share their own methods of solution with appropriate justifications, even while actively participating in processes of negotiation concerning both strategies and solutions. As Nickson (2006) points out, meaning develops in the process of this reflection and discussion.

In the ensuing section, episodes from the classroom of two teachers will be used to demonstrate ways in which meaning-making can be facilitated in order to meet a greater objective—the development of mathematical understanding and mathematical thinking. Meaning-making was derived through the use of three distinct teaching strategies, described as:

- Enabling access
- Motivating thinking
- Enabling ownership and independence

Enabling Access

This refers to teaching strategies aimed at facilitating students' access to either mathematical ideas or mathematical tasks. The strategies are: contextualizing, explaining, clarifying, reviewing, and prompting.

- *Contextualizing:* This refers to the teacher's use of either a *cultural* (real-world) context or a *contextual framework* (a context for the mathematics), usually when introducing a new idea/topic.

- *Explaining:* This refers to the teacher's explanation of the salient features of an activity (exercise, problem, investigation) *prior* to the students starting the activity.

- *Clarifying*: This refers to instances when the teacher interrupts the whole class or individual students in order to clarify what she discovers to be a misinterpretation or a misconception. This usually occurs after the students are engaged with the activity, and typically arises from the teacher's observations during the lesson.

- *Reviewing:* This refers to the teacher's review of prerequisite knowledge, concepts, or skills, typically at the start of a lesson, with the intent of providing the students with a means of connecting to the mathematical ideas in the lesson to be taught.

- *Prompting.* This refers to those occasions when the teachers provide hints about possible strategies for solving problems or obtaining a generalization; typically, when students become "stuck." "Hints" include the pointing out of an error in the students' work that could have affected the extent to which they could gain access to the mathematics embedded in a task.

Contextualizing. Whenever the teachers were introducing a new concept to their students they always started their classes within a context, which, in their view, would enable their students to establish some connection with what they already knew and the mathematical ideas they would be introduced to in the lesson. For one of the teachers, Yolanda, the "connection" she tried to establish was either with some previously known mathematical concept or with something "in their everyday life." The important factor was that she provided an introduction that gave the students something they could relate to.

The other teacher, Marjorie, also often tried to relate the mathematical ideas her students were working with to something with which they were familiar. She believed that establishing such connections would better enable her students to "form meaning for themselves," and would help them to see that mathematics was not something "in a vacuum." To provide some kind of context, Marjorie often used one of two main strategies. Sometimes she sought opportunities where she could relate the mathematics she was teaching to other school subjects. At other times, she used the school environment as a source of exploration of the mathematical ideas that were being studied in the classes.

In the following paragraphs, examples of instances from both classes where *contextualizing* is exemplified are provided.

Making connections with the students' "everyday life"

Excerpt #1: Yolanda's classroom: Mr. Brown's dilemma

In this excerpt, Yolanda is introducing a lesson where the students will be exploring the relationship between the circumference of a circle and its diameter.

I'm going to read something for you. A little story. And we're going to answer a few questions from it. Mr. Brown has a circular plot of land where he planted some corn. Each day he goes to water it he realizes that the neighbour's cows are eating more and more of the corn. This made Mr. Brown very upset. I want you to advise Mr. Brown about a way in which he could avoid the cows from eating his corn. What would you have done if you were in his position?

Bearing in mind that the school was located in rural Jamaica, this scenario would not have been uncommon in the lives of Yolanda's students.

Excerpt #2: Marjorie's classroom: Solving a social problem

In this lesson, students are asked to develop and solve an equation based on a story. Marjorie begins the class by giving them a story that she had written. The story reads:

Stuart and Randy are brothers who love each other dearly. Interestingly, they are of different complexions (Stuart is fair and Randy is dark). One day Stuart "dissed" Randy because of his colour and called him "black boy." Randy was offended. Stuart felt horrible. He decided that he would give Randy some gum to make up. A pack of gum has x sticks. He bought 5 packs and took 11 sticks for himself. Randy was so happy that he forgave his fair brother. Jody saw the exchange and boasted "I have the same amount of gum as you do!" They checked and sure enough she had one pack and 9 single sticks of gum.

Find the number of sticks in a pack of gum.

According to Marjorie, the story arose from a real-life problem that arose between two students in her class, Stuart and Randy, where Stuart called Randy "white boy." This resulted in a quarrel between the two boys. Marjorie felt that this situation presented an ideal opportunity to try to get the boys to resolve the issue and, at the same time, incorporate the use of some mathematical ideas they were learning. While the problem itself was not being modelled through the mathematics, the context within which the mathematics was presented provided sufficient interest among the students to cause them to be motivated to engage themselves in the task.

"Cultural context" versus "contextual framework"

The difference between the use of a "cultural" context and the use of a "contextual framework" is seen in the following excerpts taken from the introduction to a set of lessons from both teachers. A contextual framework is concerned with *providing a context for the mathematics being encountered.* The use of a contextual framework was a deliberate teaching strategy used by both Yolanda and Marjorie, though in different ways. They each tried to provide their students with activities, or engage them in discussions, that would either (a) enable them to focus on the mathematical ideas that were to come, (b) foster conceptual understanding, or (c) aid their students in remembering important aspects of the concept to be taught or the task to be undertaken. Sometimes their use of a contextual framework enabled all three objectives to be achieved. In Table 2, examples of instances where Yolanda used a contextual framework as she introduced three of her lessons are given.

Table 2. Examples of Yolanda's Use of a Contextual Framework

Yolanda's class: Lesson on the median	(a) "I want five students to come up. Please stand in order of height. Who is in the middle?" (b) I am going to give you some shapes and you are going to tell me how to find the middle of the shape.
Yolanda's class: Investigating palindromes	Yolanda writes on board the words "level," "mom," "dad." "Can you tell me what is similar about these words?"
Yolanda's class: Introduction to volumes	Students are placed in groups of four. They use a set of dice to fill a space by using different size cubes and cuboids.

Some instances of the kinds of contextual framework Marjorie used are illustrated in Table 3.

Table 3. Examples of Marjorie's Use of a Contextual Framework

Volume of cuboids	Class started with a review of the painted faces exercise from the previous class. (In this exercise students had to count the number of cubes that had a certain number of painted faces after the larger cube from which they were cut had been painted.)
	Students were then given various shapes made up of stacks of cubes and asked to state the volume by counting cubes.
Introduction to rotation (Marjorie reporting on her class)	I told the students that they were going to go outside and that we were going to rotate an object around a centre through an angle of 90 degrees. That's all I told them. I told them I wanted them to find a way to do it as accurately as they could. I took a student out and I put a book on the floor and I said that we could turn the student 90 degrees about that book as the centre point. I asked them where the person would fall and they estimated and I said yes.
Introduction to relations (Beginning of class)	In maths there are lots of different relationships that we have looked at throughout the year. Maths is a lot about relationships. Relationships between different things. Can you think back...I'm not going to suggest any to you...I'd like you to think back throughout the year and tell me any relationships that we have seen in maths.

Sometimes in her quest to enable access through the use of a contextual framework, Marjorie capitalized on experiences that her students had had in other subject areas. Her attempt to do this was very striking in the introduction to one of her lessons reproduced below.

Excerpt #3: Investigating pool tables

The aim of this investigation was for students to explore the number of bounces a ball would make when hit from one corner of a four-holed pool table until it landed in one of the pockets. In order to access the task, that is, in order to be able to begin to explore the possibilities that existed, students needed to understand how the ball moved as it was hit from any one of the corners of the table. The excerpt begins as Marjorie is introducing the activity to the class. I have only included sections of the discussion that highlight how Marjorie made the connection with the task and the students' prior learning in both science and mathematics.

Marjorie: Think back to when we were looking at reflection. Remember Charles was telling us something that you had learnt in science involving light and a mirror. Right? Charles, you remember that now? You could try to tell us about that now?

Charles: When you had the angle miss... The 90 degree angle..one side would be equal to the other side miss.

Marjorie: Alright, but what was it about though? What were you learning in science?

Charles draws the following diagram and writes:
< R = < I

R I
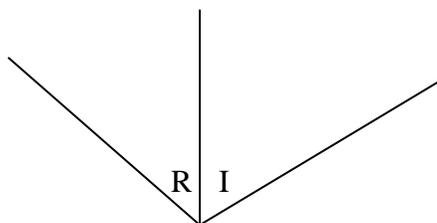
Marjorie: Alright, can you explain Charles? What does that mean?

Charles: The angle of reflection is equal to the angle of indices miss.

Marjorie: The angle of incidence?

Charles: Yes miss.

Marjorie: Can anybody explain a little bit clearer what you were talking about here? Thanks Charles. Alison?

Alison: The angle of reflection is equal to the angle of incidence.

Marjorie: Yes, but I still don't know what we are talking about. What are we talking about? .... Come what are we talking about here?

Student: Reflection.

Marjorie: We [are] talking about reflection. So it means, I assume, that you have a mirror here. [She draws a line under Charles's diagram as shown below.] *...some kind of reflective surface and then when the light rays come in and hits the mirror the angle that it makes with that vertical line* (pointing to the line) *will be the same as the*

angle on the other side. [Here she points to the angles labelled b and c.]

b c
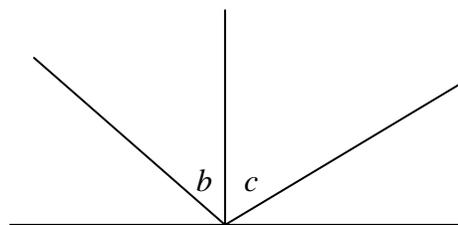
Marjorie: OK. Now what would happen then if the light came in at angle of incidence of 45 degrees? The angle of reflection would also be....45 degrees.

OK. Anybody ever played pool?

Several students say yes.

Marjorie: You have? ...OK. Let's say then that we had a pool table. I think the pool table has 1, 2, 3,4, 5, 6 pockets. We are going to look at a special pool table that only has 4 at the corners. OK? So we are going to assume that we have a ball down at one corner OK, and we're going to hit it and every time that ball hits any of the sides of the table, it is going to hit in the same type of angle as when you make an angle of incidence and reflection. It is going to hit like this... [Marjorie draws the following diagram.]
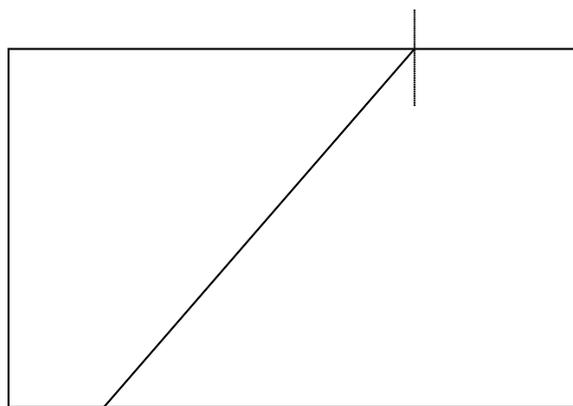
And it's going to bounce off at what angle if we are copying that? [pointing to the earlier diagram] *What angle with this line would it make?*

Some students say 45 degrees.

Marjorie: 45 degrees? Look over here again. [She returns to the original diagram showing the angle of incidence and the angle of reflection.] *When this light ray comes in, it makes an angle of 45 degrees with the normal. What angle does it make then with the ray as it comes out?*

Student: 90 degrees.

Marjorie: 90 degrees. [She then returns to the diagram of the pool table.] *So we either going to think of it as.... it makes a 45 degrees angle with the normal, or it makes a 90 degree angle with the line that it came in at. OK. So it's going to come like that and go into a pocket.*

[She demonstrates this as shown in the following diagram.]
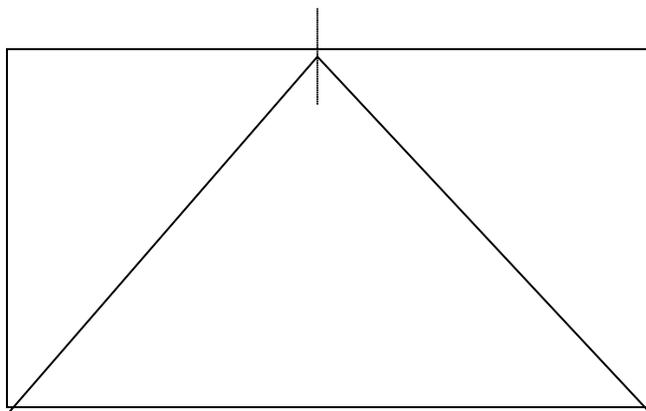
In our after-class discussion, Marjorie explained her rationale for beginning the lesson the way she did thus:

I introduced it the way I did for two reasons. When I was looking at the investigation and I realized that I needed them to think about the ball moving at 45 degrees away from the normal, it struck me that that was what Charles had been trying to explain in a class before and it would have been perfect to link it to the science they had been doing. So I thought about the fact that I could link it to another subject and the fact that it would get them to have the picture exactly since they had dealt with this before...how the ball should move when it hits the side.

Explaining. This strategy, though seemingly obvious, is an important one in the overall objective of fostering a thinking-focused classroom, particularly with respect to the overall strategy of *enabling access*. Both Yolanda and Marjorie devoted time in their classes to making a deliberate effort to explain to their students the nature of the tasks they were set—what they were expected to be doing, what the tasks required, and so on. This they did irrespective of the nature of the task—whether an exercise from a textbook, an investigation, or an activity within or outside of the classroom.

Clarifying. This strategy is, in some measure, related to "*explaining*" because some amount of explanation is embedded in the strategy. However, *explaining* and *clarifying* are made distinctive by virtue of that which occasioned the action. In the former case, the action is initiated by the teacher *prior to the students commencing an activity*. In the latter instance, the action is occasioned *in response to* a need that arises *after the students have engaged with an activity*.

For example, there were times where, in spite of the explanations that the teachers gave, students misinterpreted the requirements of a task, ignored important principles within a task, or misunderstood completely what was required of them with respect to the assigned activity. As a result of any of these occurrences, the students' engagement with the mathematical aspects of the task was usually derailed. In such instances, the

teachers would *step in* in order to help the students to get back on track. Their intervention could occur with a single student, a group of students, or, indeed, with the entire class.

One instance of this was demonstrated in one of Yolanda's classes where the students were exploring palindromes. One of the questions the students needed to respond to pertained to whether all palindromes were even or odd. I noticed that during the class, while the students were working in groups, Yolanda stopped at one group and began to explain what the question meant. In our after-class discussion, Yolanda explained the reason for her intervention:

While I was walking around and observing the different groups I realized that that group interpreted the questions in a different way. They were writing different odd and even numbers and observing them to see if they were palindromes instead of looking at the different palindromes and testing if they were odd or even. I had to explain the questions to them.

Marjorie, too, practised *stepping in* whenever she realized that students needed clarification of one type or another. While there were times when she did this with individual students, she often interrupted the entire class and discussed with them whatever it was that was being misinterpreted or inappropriately applied. Teachers must constantly be aware of what is taking place in their classes with respect to student thinking and should be ready to intervene, when necessary, to prevent frustration or incorrect responses resulting from misinterpretation of instructions or misunderstanding of concepts embedded in given tasks.

Reviewing. Whenever Yolanda did not start her lessons within a cultural context or within some contextual framework, she typically engaged the students in a review of those concepts that she considered to be important prerequisites for the lesson. In her classes, this strategy was most often used in one of two ways—either at the start of a follow-up lesson, that is, the topic had been introduced in a previous lesson and the current lesson served as a continuation, or as a prelude to an investigation.

Her review was aimed at (a) checking the student's understanding of previously learnt mathematical concepts, and (b) providing a means for them to "connect" with what was to come. For example, in one lesson, where she was following up work on the topic "Sets," she began the lesson with questions that included the following: *What can you tell me about a set? What do we mean by an element of a set? What is an empty set? How do we know when one set is a subset of another?*

When using the strategy prior to an investigation, Yolanda often questioned the students about the content embedded in the investigation. For example, in one class she gave the students an investigation that would require their knowledge of prime numbers, and odd and even numbers. Prior to giving them the task, Yolanda asked the students a number of questions: *What are prime numbers? What are odd numbers? What are even numbers? What are composite numbers? Can you give me an example of an odd prime number?*

Every class that I observed with Yolanda and Marjorie began with either the use of some culturally relevant scenario, an activity that utilized a contextual framework, or a review of one type or another. The aim here was also two-fold: to determine the existing prerequisite knowledge and understandings that the students had, and to provide the class with a link to concepts they had encountered in previous lessons. In Table 4, examples are shown when Marjorie demonstrated the use of the "review" strategy.

Table 4. Examples of Marjorie's Use of "Review" in Enabling Access

Investigating the number of squares on a checkerboard	How may persons play checkers? How does a checkerboard look? Let's look at this checkerboard. (She places a diagram on the whiteboard.) Is the shape a square?
Lesson: Types of triangles	Tell me all you know about triangles.
Lesson: The relationship between the circumference of a circle and its diameter	Today we're going to be talking about circles, and I'm sure all of you know what a circle is because you've been introduced to it from way down far in Prep School. So, I want somebody to volunteer to tell me what is a circle.
Lesson: Angles formed when lines intersect	Parallel and perpendicular lines are integral to this lesson so we will start with a review of parallel and perpendicular lines using a worksheet where students identify these on some figures.

Motivating Thinking

Motivating thinking refers to teachers' deliberate use of a strategy aimed at facilitating the development of their students' mathematical thinking skills. The major teaching actions so classified are:

- questioning
- encouraging students to make conjectures
- requiring students to justify their solutions
- giving tasks or posing situations that require students to:
    - make connections with previously learned mathematical concepts
    - analyse mathematical information and make decisions
    - evaluate mathematical situations
    - organize mathematical information
- creating perturbation — that is, causing a "disturbance" in the thinking of a student, typically by the presentation of a counter-

example of a concept that the student had previously defined

In the ensuing paragraphs, the teachers' use of questioning and Marjorie's strategy of "creating perturbation" will be discussed.

Questioning. The following instances demonstrate some of the questions that the teachers asked and the comments made to students, which were aimed at motivating their students' thinking. For each instance, I have suggested the processes that can be invoked from the questions asked, but accept that other mathematical thinking skills could also have been invoked.

Yolanda: Do you think he could have used a metre rule to measure around the land? (Making connections, analysing)

Yolanda: What did you notice when you were finding the middle of the shape? (Enabling reflection)

Marjorie: What is it about a circle that doesn't make it a better unit for measuring area than the square? (Analysing, reflecting, connecting)

Yolanda: [In this class, the students have been working with palindromes. They have looked at 2-, 3-, 4-, and 5-digit palindromes.]

I want you to come up with a sentence to explain what palindromes are. (Gathering information, reflecting, making connections)

Marjorie: How many of the cubes will have only one side painted?

Student: 6.

Marjorie: You need to justify that. (Justifying)

*Yolanda: What do you think the next line would be? (*Conjecturing)

Marjorie: Can you think of any way that will make the task easier? (Evaluating, analysing)

Marjorie: Maybe you should write down a few more and see if you can find a pattern. (Seeking patterns, organizing)

Marjorie: How many ways can you represent half a rectangle? (Reflecting, analysing, making connections)

Further examples of the way in which Questioning was used as a deliberate teaching strategy are provided below.

Main purposes of questions used by Yolanda and Marjorie

▪ **Stimulate thinking**

What would you expect to be the relationship between the centre and the object and the centre point and the image?

What is the same and what is different about the square and the rhombus?

▪ **Meta-thinking** (also stimulates thinking but with a focus on reflection)

Why didn't you place 'e' in Set B?

After you found the number of squares in a 3 x 3 square, how did you go about finding the number of squares in a 4 x 4?

Is there another way you could do this?

▪ **Checking understanding**

Why would we divide by 3? (Revision of the mean)

What is the intersection of A and B?
(Though seemingly a Recall question, this was classified here because, in fact, the two sets did not intersect and Yolanda was trying to test the students' understanding of the concept of intersection when she posed the question.)

Is there a difference between capacity and volume?

▪ **Recall** (of knowledge, facts, formulae, etc.)

What is the question asking you to do?
What is a rhombus?
What does A U B mean?

▪ **Explorative** (used to determine student's existing knowledge or how the student is thinking about something)

[Marjorie is trying to understand what a student has been saying to her.]
OK....If you had a triangle ABC, and you rotated it.....Is it that you are trying to say that the order of the names is the same?

Is this what you mean?

Also included in the teachers' repertoire of questions were questions such as: *What if...? Have you tried another way? What do you think about...? What do you notice? How can we tell? Could you have used...?*

Creating perturbation. Marjorie often tried to place her students in situations where they were forced to revisit their own thinking about a mathematical idea. By *"creating perturbation,"* Marjorie provided an ideal opportunity for her students to engage in metacognitive activity and to question their own interpretation of the mathematical idea being discussed—possibly without their realizing that this was what they were doing. An example from one of her lessons demonstrates how this strategy was used.

This excerpt begins at a point where Marjorie is trying to elicit from the students a description of a circle.

David: Anything that's round.

Marjorie: David, what is round? Describe round for me. Anybody wants to describe round without using the word "circle"? Elise?

Elise: Something that doesn't have any straight lines.

Marjorie: Something that doesn't have any straight lines. OK.

She then draws the following diagram on the board.

Marjorie: [addressing Elise] *"Round? No straight lines."*

Marjorie: Elise, want to try and finish that?

Elise shakes her head.

Marjorie: Anybody else?

Stephen: And meet at a point.

Marjorie: Meet at a point. Uhm...OK.

She moves to the whiteboard.

Marjorie: You know what I'm going to do right?

Marjorie then connects the two ends of the diagram she had previously drawn as shown below.
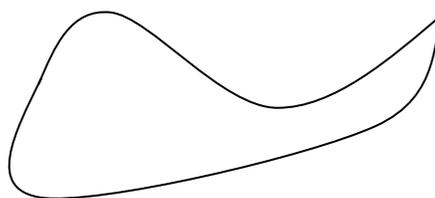
Marjorie: Round?

We now turn to the final teaching strategy that the teachers used to enable meaning-making – Enabling Ownership and Independence.

Enabling Ownership and Independence

This refers to the deliberate effort to provide students with a sense of ownership of the mathematics they were learning. This can be done in different ways, but the most prominent strategy used by the teachers in this study was the encouragement of the students' own solution methods and definitions. I offer here instances that, while not in context, serve to demonstrate the frequency with which the teachers in the study provided their students with the latitude to take control of their own learning.

You can use any method.

*I want **you** to come up with the definition.*

*I want **you** to come up with a sentence to explain what palindromes are.*

Do anything you want; it's up to you. Go ahead, you find a way.

There are different things you can look at and I'm leaving it up to you.

*What do **you** think? It's up to you.*

*There is no wrong or right thing about it you know. It's **your** observation. That's why I want **you** to tell the whole class what you have done.*

Conclusion

The use of a constructivist approach to teaching mathematics can reap positive benefits for the learners of the subject and could change the face

of mathematics education in the Caribbean. Its tenets allow for the development of models of teaching, one of which was exemplified in this paper. As we grapple with ways of improving performance in the subject, there is need for more classroom-based research in order to provide even more models of teaching so that strategies for enabling meaning-making and the development of mathematical thinking and mathematical understanding can be uncovered and explored.

References

Bell-Hutchinson, C. (2004). *Teaching-for-thinking: The implementation of thinking-focused pedagogy in two Grade 8 mathematics classrooms in Jamaica.* Unpublished doctoral dissertation, The University of the West Indies, Mona, Jamaica.

Ernest, P. (1994). Social constructivism and the psychology of mathematics education. In P. Ernest (Ed.), *Constructing mathematical knowledge: Epistemology and mathematical education* (pp. 62–71). London: Falmer Press.

Freire, P. (2002). *Pedagogy of the oppressed* (30th anniversary ed.). New York: Continuum.

Hiebert, J., Carpenter, T. P., Fennema, E., Fuson, K. C., Wearne, D., Murray, H., Olivier, A., & Human, P. (1997). *Making sense. Teaching and learning mathematics with understanding.* Portsmouth, NH: Heinemann.

Neyland, J. (1995). Eight approaches to teaching mathematics. In J. Neyland (Ed.), *Mathematics education: A handbook for teachers, Vol 2* (pp. 34–48). Wellington, New Zealand: Wellington College of Education.

Nickson, M. (2006) *Teaching and learning mathematics: A teacher's guide to recent research and its application* (2nd ed.). London: Cassell

Schoenfeld, A. (1994). Reflections on doing and teaching mathematics. In A. Schoenfeld (Ed.), *Mathematical thinking and problem solving* (pp. 53–70). London: Sage

Simon, M. (1995). Reconstructing mathematics pedagogy from a constructivist perspective. *Journal for Research in Mathematics Education 26*(2), 114–145.

Vygotsky, L. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Watson, A. (2002). What does it mean to understand something and how do we know when it has happened? In L. Haggarty (Ed.), *Teaching mathematics in secondary schools: A reader* (pp. 161-175). London: RoutledgeFalmer.

Watson, A., & Mason, J. (1998). *Questions and prompts for mathematical thinking.* Derby, UK: Association of Teachers of Mathematics.

Sign It In; Sign It Out, Up and Down the Caribbean: Preparing the Deaf for CSME

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Abstract. This study compared signs for words that are distinctly Caribbean, and investigated the perspectives of educators of the Deaf on the differences in signs among the islands. The findings indicate that the limits that characterize individual island signs preclude fluent communication among the Deaf from different islands. I propose that signs for words that are distinctly Caribbean need to be standardized and documented to facilitate effective communication and participation in the Caribbean Single Market and Economy.

Introduction

In the Grand Anse Declaration, Caribbean Community (CARICOM) Heads of Governments expressed their determination to work towards establishing a single market and economy. The CARICOM countries anticipate that a CARICOM Single Market and Economy (CSME)—one large market among participating member states—will benefit the people of the region by providing more and better opportunities to produce and sell goods and services, and attract investment.

CSME's major objectives include the full use of labour (full employment); full exploitation of the other factors of production (natural resources and capital); and competitive production leading to greater variety and quantity of products and services to trade with other countries. CARICOM countries envision that these objectives will translate into improved standards of living and work, and sustained economic development.

The Key Features of the Single Market and Economy

Free movement of goods and services. CARICOM proposes to eliminate all barriers to intra-regional movement and harmonize standards to ensure that the traded goods and services are of acceptable standards.

Right of establishment. CARICOM-owned businesses can exist and operate in any CARICOM member state without restrictions.

A common external tariff. When members of the market import products from other countries that are not members of the market, they will apply a common rate of duty to these products.

Free circulation. Member countries will share the collected custom revenues for goods that they import from extra-regional sources. These imported goods will require collection of taxes at the first point of entry into the region.

Free movement of capital. CARICOM will eradicate foreign exchange controls and ensure convertibility of currencies (or introduce a common currency), and establish an integrated capital market, such as a regional stock exchange.

A common trade policy. Members will jointly negotiate a coordinated external trade policy and will agree on matters related to internal and international trade.

Free movement of labour. CARICOM will eliminate all barriers to intra-regional movement of skills, labour, and travel; harmonize social services (education, health, etc.); establish systems for the transfer of social security benefits; and institute common standards and measures for accreditation and equivalency.

Joan Bobb-Alleyne-Dann

CSME and Persons With Disabilities

As people of the region welcome the CSME and begin to explore opportunities for self-advancement, I feel committed to advance the cause of persons with disabilities. These persons have always comprised a significant percentage of the population but have always had to struggle for their survival. Where are they positioned in CSME? Are we confident that they can successfully participate in this initiative? What implications are there for educators in the Caribbean? More specifically, how can persons who are deaf survive successfully within this new initiative?

Inclusive Education and CSME

In recent times, the issues of persons with disabilities have become the theme of many reforms in education, the latest being inclusive education. Universally, inclusive education means that children and young people with and without disabilities learn together in preschools, primary schools, secondary schools, and universities with adequate, relevant networks of support (Centre for Studies on Inclusive Education, 2006). It means enabling students to participate in life and work, whatever their needs. Inclusive education involves a valuing of all students and staff equally, and restructuring the cultures, policies, and practices of schools so that they respond to the diverse needs of their students. It also involves increasing students' participation in, and reducing their exclusion from, the cultures, curricula, and communities of local schools, and removing the barriers to learning and participation for students with impairments and special educational needs. Inclusive education involves learning along the way, as teachers and administrators learn from their attempts to remove barriers to access and participation of particular students, and use this learning to develop strategies for other students. They view the differences between students as resources to support learning rather than problems to be overcome.

The Language of the Deaf

Within this new educational and economic paradigm, I resolved to re-interrogate the recurring theme of the language of the Deaf. I did so specifically within the context of CSME. Simultaneous to my inquiry, a battle of cultures was raging at Gallaudet University, in which Latoya Plumber passionately and fluently informed the world, in Sign Language, that persons who are deaf have a valid culture and a language that is sacred to them. This represented one of the many battles to which the Deaf have grown accustomed.

Deafness and people who are deaf date back to the beginning of humanity (SignGenius.com, 2006), and the hearing-deaf and oral-manual battles—raging for centuries—even saw an attempt to ban sign language in Italy in 1880 at a conference that included teachers and educators of the Deaf, but excluded persons who were deaf. Despite the struggles, the Deaf continued to sign outside of school and established a Deaf culture, which they defend with pride.

The Deaf have always had to fight for their survival (Dummies.com, 2006). They had little access to education and very limited opportunities to access employment. Some societies labelled them as demon-possessed; families hid them; Hitler's henchmen confined them to concentration camps and then castrated them as parts of medical experiments; and, in some instances, people tried to force them to try to speak even though they could not hear themselves.

Over time things have improved, and Sign Language—the language of the Deaf—like its users, survived deliberate attempts to eradicate its use. Even today, however, hearing people often question, "Is sign language really a language?" Yes it is! Sign language responds to analysis at any of the same levels used for spoken language in terms of morphology, phonology, syntax, semantics, and pragmatics. It is the language of the Deaf. What is the picture of the language of the Deaf in the Caribbean? Do they have a common facility with which to communicate? Can hearing persons use this language to successfully converse with the Deaf?

Attitudes Towards Sign Language

Many hearing persons in the Caribbean embrace a medical view of deafness and persons who are deaf. They view deafness as a disability that needs to be remedied. With this pathological approach, hearing persons believe that the Deaf should attempt to improve their speech and listening skills to fit in with the rest of the society since sign language is not a means of communication for the hearing. These persons believe that speech is normal and signing is not, so they view signing with disfavour or indifference.

Many persons believe that sign language is really mimes and gestures and is not real language. I am particularly disturbed by the fact that so many persons see sign language as something to learn for concert performances. Many persons who sign for performances cannot really communicate with persons who are deaf because they seek out instruction only when they need to sign a song. Considering that they learn mostly signs for the concepts in the song, one can understand the limited nature of their expressive and receptive signing.

Some persons regard sign language as a language to be known and used by the Deaf and those closest to them, while others recognize that it is a useful tool for communication between the Deaf and the hearing. In Trinidad and Tobago, service providers generally rely on teachers to assist in communicating with deaf clients. Social workers, counsellors, police officers, doctors, and nurses often compromise confidentiality between themselves and their clients by using a third person, usually a teacher of the Deaf, to interpret. The court system also relies heavily on the honesty of teachers as interpreters.

Other persons believe that the language is difficult to learn and often express admiration for those who use it, while others think that deaf education consists only of instruction in the language itself.

A comparison of the signs used in different Caribbean countries provides further illumination of the picture of the communication facility that the Deaf in the Caribbean utilize.

Comparing Signs in the Caribbean

Most schools in the Caribbean use total communication in the education of the Deaf. This communication strategy involves the use of lip reading, reading, writing, mimes, facial expressions, approximated speech, auditory training, amplification, gestures, sign language, and any means possible to convey thoughts, ideas, and emotions. It is no secret that the Deaf prefer to sign, despite many attempts to eradicate the use of signs, not only in the Caribbean, but in many parts of the world. Persons who are deaf love to sign and they use this mode extensively to communicate with each other. They want to use their language. It is no secret, too, that the Deaf identify themselves as a distinct culture, partly symbolized by the capital D in the word Deaf. A critical component of any culture is its system of communication. Sign language inhabits the culture of the Deaf.

Schools in the Caribbean use American Sign Language dictionaries and a system of signing that is English language-based. English-based signing differs from American Sign Language in terms of sentence structure. While English-based signing follows the pattern of English language sentences, with signs substituting for words, American Sign Language uses a structure that attempts to follow the known pattern of deaf thought and conceptualization. Wherever there are no signs for words or concepts, the signer fingerspells. Fingerspelling involves the use of a hand formation for each letter of the alphabet.

American Sign Language dictionaries do not include words that are distinctly Caribbean, but there is no dictionary of Caribbean signs. I am uncomfortable with the vast diversity in the signing vocabulary in the Caribbean, a small community.

In 2006, I embarked on an investigation of signs used by the Deaf in the Caribbean. I regarded this enquiry as significant to the success of the Deaf as they negotiate CSME, since it should influence thought and action regarding Caribbean sign vocabulary, initiate or extend the discourse in this area, and supplement the body of knowledge on Caribbean sign language regionally, locally, and internationally. This exploration is also likely to be a catalyst for the standardizing of Caribbean signs. Furthermore, I envision that it

will create an impetus for the documentation of a dictionary of Caribbean signs.

Research Questions

1. *How do signs used in different islands for words that are distinctly Caribbean compare with each other?*

2. *What are the perspectives of educators of the Deaf in the Caribbean on the results of these comparisons?*

Methodology

In August 2007, I obtained a convenience sample of teenagers who are deaf and their teachers who attended a two-week camp in Tobago. Participants came from St. Lucia, St. Vincent, Barbados, and Trinidad and Tobago. I divided the participants into their respective island contingents. In an effort to avoid signing the words, and possibly influencing the way the islands presented their signs, I displayed pictures to represent each word for which I needed signs. Categories of words included names of islands, names of Caribbean foods, and names of Caribbean festivals.

I presented each word to each contingent in turn and recorded the signs on a digital camera. I also used a scribe to record the description of the signs. As each group signed a word, I dictated the formation to the scribe. This particular strategy eliminated the possibility of error in interpretation, and ensured that the scribe was correctly reading and recording the description of the signs that the groups presented. I also asked participants to present any other sign that persons in their islands use for each word for which they presented a sign.

The second part of the data collection involved a whole-group discussion on how the participants felt about the exercise in which we saw the signs for words that are familiar to the four countries. I also asked the group to indicate their thoughts about the fact that there are so many words that are distinctly Caribbean for which there are no signs, thus demanding that they be fingerspelt. I recorded the information in writing.

Findings

The data indicated that, in the Caribbean, persons from different islands use totally different signs for the names of the islands. When I examined the signs for Barbados, St. Vincent. St. Lucia, and Trinidad and Tobago, I recognized that each island had its own formation.

Educators of the Deaf and their students believe that the differences in signing among the islands preclude the possibility of fluent communication. The participants indicated that conversations are often punctuated by stoppages for explanations and clarifications of signs for words that are distinctly Caribbean.

The participants agreed that there are too many differences among signs that relate to all the islands. They suggested that signs should be developed for words that are distinctly Caribbean. The participants also suggested that a dictionary of Caribbean signs and textbooks teaching the signs must be developed and used in all schools in the Caribbean. Sign language, they suggested, should be on the timetables of all schools.

Students and teachers desire a standard set of signs for words that are distinctly Caribbean. They suggested that all the Caribbean countries collaborate to actualize this suggestion. During the discussion, the participants also suggested that each island has the right to determine the sign for its name.

Discussion/Recommendations

Formalizing and standardizing the language of the Deaf is one of the critical factors in ensuring that the Deaf benefit from and contribute to the CSME initiative. The eradication of the language barrier created by a lack of knowledge of signs, the non-existence of signs, and the diversity of existing signs will create opportunities for easier communication among persons who are deaf, and between hearing persons and persons who are deaf.

We can begin the process of formalizing Caribbean sign language vocabulary by standardizing the names of the islands, and in this case I strongly propose that each island reserves the right to determine how it wants its name to be represented. Countries should be responsible for sharing this representation with other islands or

countries. This process can be likened to telling others our names and correcting them whenever the names are mispronounced. Moreover, the correct interpretation of signs is contingent on spatial and directional clues, which, when altered, can lead to confusion and requests for clarification.

The absence of signs for popular Caribbean words is disturbing. We all know spice, clove, nutmeg, breadfruit, chenette, genip, ackee, dasheen, cassava, and so on. American Sign Language dictionaries do not include these words. The Deaf resort to fingerspelling whenever they need to use these words in conversation. Teachers resort to fingerspelling when they use these words in teaching. It is bad enough that fingerspelling (producing a hand formation for each letter) adds an annoying staccato discolouring to conversation, but the less fluent fingerspelling of hearing persons—including teachers—dinges, mis-punctuates, and makes conversations boring. Persons who are deaf obviously sign much more fluently than any hearing person because, after all, it is their language.

Educators of the Deaf and their students need to assemble in a forum that discusses sign language. The relevant ministries in each island must collectively discuss a plan for standardizing Caribbean signs and developing a dictionary of signs. These plans should be executed urgently if we are to adequately prepare the Deaf for successful economic participation in CSME.

Sign Language and Caribbean sign vocabulary should be on the syllabus of all schools in the Caribbean. In this way, every student will learn to communicate with the Deaf. Beginning teachers, teachers in training, and qualified teachers should all receive special instruction in sign language and Caribbean sign vocabulary.

A dictionary of Caribbean signs and an internationally accepted Sign Language dictionary should be on the booklist of all Caribbean students. We must maintain the international signs since we cannot limit persons who are deaf to communicating solely with persons within the Caribbean. We must adequately prepare these persons for participating successfully locally, regionally, and internationally.

All persons in the Caribbean should learn sign language, the language of the Deaf. Educators of the Deaf and educational administrators should therefore conduct sign language classes for the general public. This facility should also be extended to essential services, and persons in offices and other places of work and leaning.

Let me sound a word of warning here. The process of documenting and standardizing must be no hearing person's trophy. Every step must be managed by the culture that it affects. If ever we are tempted to dominate the process, let us remember Latoya Plumber. Let us begin now!

Why Standardize

The same historical rules that result in the modification of the forms of spoken language also change the physical form of signs. Persons who are deaf develop signs out of a need to communicate more effectively and comfortably with each other. At first, these signs assume a crude, gesture-like, pantomime-like nature, similar to that which would characterize the gestures of a hearing person if he has to describe something without speaking. Later, these signs become shorter and iconic in nature. It is important to note here that the Deaf improvise and spontaneously invent signs every day. The number of signs that the Deaf in the Caribbean use, therefore, can continue to increase. However, a common set of signs can yield many benefits.

Research shows that when persons in conversation use the same gestures and body language they will perceive themselves to be related and will experience greater empathy. Similarly, when people use the same signs, the similarities may provide a background for empathy (Abrantes, 2006).

While I welcome diversity, which I am sure will still exist in the sign language in the Caribbean, I believe that communication between deaf persons in the region will be enhanced if common words are standardized. Since individuals will have fewer reasons to explain signs, communication will progress with fewer interruptions.

While we feverishly attempt to reduce language barriers among the hearing persons in the Caribbean, we should also reduce the barriers among persons who are deaf. In addition, we should also reduce the barriers between the hearing persons and persons who are deaf. A standardized system of signing in the Caribbean

will create a common language with which persons who are deaf and persons who are hearing could communicate.

The Impact of Documenting the Signs

Printing, introduced in England in 1476, helped to increase the spread of knowledge and literacy among the British. As with the English language, Caribbean sign vocabulary can gain popularity and establish itself regionally if it is documented and compiled as textbooks and dictionaries.

Conclusion

The foregoing arguments indicate that standardizing and documenting signs for words that are distinctly Caribbean must be done urgently. Providing persons who are deaf and hearing persons with a greater facility for communication will assist the Deaf in communicating on a wider scale. Educators and educational administrators in the region should seize the initiative to lead these processes. As they do so, however, they must remember that a standardized set of signs and universal knowledge of sign language must accompany relevant education for the Deaf to permit them to participate and benefit from CSME and in the world.

References

Abrantes, R. (2006). *The silent language—The human non-verbal communication—How to understand the real problem*. Retrieved December 18, 2006, from http://www.etologi.dk/TheSilentLanguageBody.htm

Centre for Studies on Inclusive Education. (2006). *What is inclusion*? Retrieved December 22, 2006, from http://inclusion.uwe.ac.uk/csie/csiefaqs.htm

Dummies.com. (2006). *Facing the challenges of the deaf community*. Retrieved December 22, 2006 from http://www.dummies.com/WileyCDA/DummiesArticle/id-1975,subcat-LANGUAGE.html

SignGenius.com. (2006). *Sign language: Historical background*. Retrieved December 18, 2006, from http://www.signgenius.com/info-sign-language-01.shtml

Reconceptualizing the Agenda for Language Education at the UWI: Languages for All

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Abstract. In 1997, the St. Augustine Campus of The University of the West Indies (UWI) embarked on a programme of languages for all via the establishment of the Centre for Language Learning (CLL). The mission of the unit was clear. The CLL was to be the institutional means for organizing and expanding the teaching of foreign languages at UWI, St. Augustine. Its mission meant that students could now aspire to foreign language competence as a core skill of their "graduateness." At the end of the first decade, it is useful to examine how successfully the CLL has accomplished its mission. Moreover, as it embarks on its second decade, a refocusing of its mission—with reference to current research on non-specialist learning, new societal imperatives such as the Spanish as a First Foreign Language (SAFFL) Initiative, and institutional objectives such as the Campus's adoption of internationalization as a strategic objective—is called for. These are the issues addressed in this paper, which seeks to set out how the CLL, as a UWI centre of excellence for languages, proposes to meet the challenge of teaching, research, innovation, advisory and community services, and intellectual leadership in non-specialist language learning in the next decade.

Introduction

Background to the CLL/Language Centres

By order of the St. Augustine Campus Finance and General Purposes Committee, a campus centre for languages was established in August 1997. This new teaching unit, the Centre for Language Learning (CLL), was to become the institutional means for organizing and expanding the teaching of foreign languages at The University of the West Indies (UWI), St. Augustine. The CLL's immediate focus was on Spanish and French, two international languages spoken in the region. But its mission to organize and expand meant that it was mandated not only to bring a different group of learners to the language-learning table, but also to introduce new languages to the menu.

A review of the CLL's work reveals that it has been very successful—both in quantitative and qualitative terms—in meeting its original mandate. From a core of 2 languages, the CLL has expanded to offer some 10 languages: Arabic, (Mandarin) Chinese, French, German, Hindi, Italian, Japanese, Latin, Portuguese, and Yoruba. Additionally, in January 2006, English as a Foreign Language (EFL), formerly attached to the Department of Liberal Arts, was included in the curriculum at the CLL. From approximately 200 students, the CLL now regularly enrols 700 persons in its campus programmes and approximately 60 learners off-campus. Qualitatively, the CLL receives high praise from its students, who value the dynamism of their teachers and the fact that many of them are native speakers of the languages they teach. External assessments have been equally complimentary. The CLL underwent its first full-scale programme review, via a Quality Assurance Review, in December 2005 and emerged with flying colours.

The CLL has grown. But, not surprisingly, this dynamic growth has not been without certain drawbacks. As the CLL prepares to enter a new decade, it is an opportune moment to pause and reflect on its work thus far. If we are to chart a path forward for this campus language centre, the clichéd looking back to look forward is a necessary step in the process. A good starting point for this review is to revisit the notion of the CLL as a university language centre.

Challenges and Opportunities

One criticism levelled against the CLL in the Quality Assurance Review was that it had succumbed to mission creep. The reviewers felt that as it had expanded, there had been some degree of dissolution of its primary focus and, as a result, the CLL's mission as a university language centre had become obscured, both for internal and external stakeholders. The fundamental question then was: What is a university language centre and what is or should be its mission?

Identity/identity formation is a truly contemporary challenge, which equally besets the individual juggling roles and responsibilities and institutions. In the case of UWI, the question can be posed: How does the premier tertiary education provider in the region reconcile its role and responsibilities as (a) a research intensive institution that values research and publication, and uses this as *the* metric for promotions; (b) an institution in the mould of a liberal arts college with a focus on high-quality undergraduate teaching; and (c) an enabler in the society, cognisant that, within a perspective of tertiary education for all, it must assume a responsibility to increase access by providing pathways to a university education for traditionally under-represented groups?

I am not suggesting that these roles and responsibilities are mutually exclusive. But like many of UWI's internal stakeholders, I am fully aware of the dissonance that sometimes seem to arise from attempts to engage equally on all these fronts at the same time. The CLL's identity crisis was no less profound. Is it a revenue-earning profit-seeking enterprise? Is it a provider of extra-curricular (not accredited, therefore less prestigious) learning for the student population? Is it an enabler of the university's public service mission, providing a public good—subsidized language training—for adult learners? All of these issues about what the CLL is and what it does are further complicated by its web of relationships with department, faculty, and campus.

Defining a University Language Centre

A useful definition of a university language centre and its role in providing non-specialist language learning is provided by Fay and Ferney (2000):

Institution-Wide Language Programmes and Language Centres aim to maximise opportunities for language learning by providing a comprehensive and viable language programme which takes into account the needs of a wide spectrum of non-specialist language learners. These learners, who specialise in disciplines other than modern languages, now outnumber those specialising in languages in Higher Education. To identify and meet their needs, provision must emphasise how language learners' competencies can transfer from generic contexts to a range of disciplines; it must promote greater awareness of learning strategies and devise curricula which facilitate subsequent professional mobility across linguistic and cultural frontiers in an increasingly global economy. Mapping non-specialist provision has prompted much debate about the process and product of learning and teaching during a period of unprecedented change within the language learning community. (book jacket blurb)

This definition of the what and how of a language centre coincides well with the original mandate of the CLL to organize and expand the teaching of foreign languages at the St. Augustine Campus of UWI. The Fay and Ferney (2000) definition also points to some of the characteristics of a university language centre. A university language centre's scope is campus/institution wide, and its curriculum represents a departure from the traditional offering for specialist learners. The reach and nature of non-specialist provision are intended to have a broad appeal to students from all disciplines, and in many institutions in the UK, Institution-Wide Language Programmes (IWLPs)/non-specialist programmes are dubbed "languages for all" programmes.

Reconceptualization of the Centre's Mission

The challenge to our identity forced us on to the path of realigning our work with our original mandate. As part of the process of redefining who we are and what we do at the CLL, we embraced

the suggestion of the Review Team to define a core mission, a commercial mission, and what was dubbed a *pro bono publico* mission. Our core mission then is the provision of "languages for all"/institution-wide non-specialist programmes. Our commercial mission is the revenue-earning role referred to earlier, and our *pro bono publico* mission is a public/outreach mission that allows us to see added value not only in financial terms. As the title of this paper suggests, and in keeping with the conference theme of reconceptualizing the agenda in education, the major thrust of this paper will be on our core mission—the languages for all programme. The paper will therefore explore what a languages for all approach means to the institution and the wider society. To do this, I will examine some curricular issues and then some sociocultural challenges that influence a languages for all agenda. Finally, I will discuss what I see as an appropriate institutional response to the challenges that I have outlined.

Curricular Issues in Non-Specialist Learning

I will confine my attention to three curricular issues that tend to feature prominently in discussions on non-specialist language learning, and which also engage our attention as we try to craft the best curriculum for our learners: content, entry levels, and levels of achievement. As noted earlier, most non-specialist learning tends to be generic language provision catering to students from a variety of disciplines. This pedagogical decision is supported by research from applied linguistics, which demonstrates that specialist lexis and registers are independent of the actual structure of the language (see O'Leary, 2000). Moreover, the lexical items that are peculiar to each discipline occupy such a reduced field that it seems more efficient to give priority to the common core of generic technical terms in whole-group teaching, and respond to the disciplinary focus in some other way, for example, via strategy instruction or an autonomous approach.

A second curricular issue that often appears in discussions on non-specialist teaching and learning centres around entry levels of non-specialist language courses, and the fact that the majority of this provision is sub-A Level. The concern here is that such courses introduce an academically less challenging element into a degree programme and compromise the degree status of the student's major. Ferney (2000) and Brierley (2006) both provide robust rebuttals to this argument. Ferney (p. 6) contends that "sub-A Level elements can be tolerated within a degree programme provided the degree programme *as a whole* is of A Level + 3/4 standard." Brierley makes a similar point, citing Quality Assurance benchmark statements that routinely allow for a range of generic and transferable skills, which can be accredited within a degree programme without compromising the core disciplinary competences that are taught and assessed at the degree level.

What is seen as a more critical curricular issue for linguists involved in non-specialist teaching is that the levels of competence achieved in the various stages of the IWLPs are clearly specified. Indeed, defining language proficiency in a way that makes clear both to students and other stakeholders what they (students) can do with the language is a pedagogical concern at the heart of *all* language teaching (e.g., Bissar, 2000). The adoption of the Common European Framework of Reference (CEF)— a non-language specific tool— has been a tremendous boon in this regard. The CEF (2001) recognizes a basic, independent, and proficient user and provides illustrative descriptors of the competence of these users in the four broad skills areas. This has facilitated both curriculum/syllabus development and testing/assessment/certification at many language centres in the UK, in Hong Kong, and throughout Europe. Sheils' (2001) view that adoption of the CEF can "facilitate coherence and transparency in the description of objectives, content and methods" is widely shared by many in languages. At the CLL, we too are in the process of adopting the CEF. We have found that not only does the CEF provide good descriptors for our programmes, but it also facilitates articulation with the Caribbean Secondary Education Certificate (CSEC) and the Caribbean Advanced Proficiency Examination (CAPE) Spanish and French, which, like the GCSE and AS/A Level language syllabi, are inspired by a communicative approach to language learning. Adopting the CEF will allow us to more easily reward previous school-based learning certified by the Caribbean Examinations Council (CXC).

A third curricular issue alluded to earlier is the integration of a learner autonomy approach in non-specialist language provision. Broady and Kenning (1996) underscore the utility of learner autonomy in the higher education language curriculum:

> Promoting learner autonomy has become an important aim for many university language teachers as they respond positively to the widening range of student needs and interests, the exciting possibilities for self-directed learning offered by new technology, and the increasing emphasis in higher education on providing students with skills for life-long learning. (book jacket blurb)

The greater heterogeneity of the non-specialist language classroom—differences in students' disciplinary background, their previous experience of foreign/second language learning, their perceptions about language learning, their learning styles, their vocational/academic/social reason for learning a language—in comparison with a specialist programme, suggests that a one-size-fits-all approach would not be suitable. In a curriculum that integrates learner autonomy, there are more opportunities for learners to personalize their learning according to their own learning profile. Learner autonomy promotes the sharing of responsibility for learning between teacher and students (Carter, 2006). Thus, while the classroom teacher takes charge of the core content, autonomous learners working in a self-access centre, with the support of classroom teacher or language adviser, *can* tailor their independent learning to enhance classroom learning, for example, as discussed earlier with reference to a specialist lexis. Learners can exercise considerable freedom by focusing on skills, topics, media, materials, and so on of their own choosing. Further, they may work in ways more appropriate to their learning style than in the whole-group encounter.

Sociocultural Conditions Affecting Language Teaching/Learning

Moving from the curricular/classroom focus, this paper will now look at some of the wider issues affecting non-specialist learning and the implications of promoting a languages for all perspective in Trinidad and Tobago. While the classroom is undoubtedly one of the most important parameters in classroom-based acquisition (e.g,. Freed, 1991), Stern (1983, p. 274) reveals the multiplicity of factors that affect language teaching and learning. Dörnyei (2003, p. 4) notes that a foreign language is "socially and culturally bound, which makes language learning a deeply social event." While Dörnyei's focus is on the sociocultural dimensions of the target language (L2), Stern's diagram shows that the sociocultural dimensions of the native language (L1) context are no less significant in classroom-based acquisition.

The role of English as the official language of Trinidad and Tobago immediately suggests one of the challenges involved in promoting language learning/teaching locally. The progressive spread of English and its status as *lingua franca* in the globalized world often means that English speakers are less willing to invest in foreign language learning. English speakers' knowledge of the importance of English is further buttressed by a belief that the majority of the world's population is monolingual and that multilinguals are the exception. This is a myth that proves difficult to dispel, even among educated L1 speakers.

Research conducted by Horwitz (1987), among others, has revealed some of the implications of learners' beliefs on their attitudes and motivation. It is hypothesized that in contexts where language learning is not highly valued, the group language learning self-image is lower (Horwitz, 1987). This hypothesis was also shown to be valid in the local context. In research conducted among specialist learners of French in 1997/98, reported in Carter (2006), there was almost universal agreement that everyone can learn a foreign language. Students were also confident about their individual potential for success. On the other hand, there was less enthusiasm about the language learning potential of the society as a whole. The majority of respondents were neutral, neither agreeing nor disagreeing that people in Trinidad and Tobago are good at learning foreign languages.

Another example that illustrates the significance of the group language learning self-image among L1 English speakers is found in research by Byrne (2006). Byrne found that 99% of non-specialist university students in his 2005/06 survey thought that the EU goal that all students

should have skills in their mother tongue plus two languages was desirable. However, only 45% thought it achievable in the UK context. Byrne compares these figures with figures from a cohort of non-UK students in the same survey; figures that were, according to Byrne, unexpectedly much higher. Both these examples underscore how the group language learning self-image can be strongly influenced by prevailing societal attitudes to languages and language learning.

The influence of sociocultural factors on language teaching/learning throws into sharp relief the importance of a language policy as a guiding document and the sign of a society's commitment to language learning. In Trinidad and Tobago, the Spanish as a First Foreign Language (SAFFL) Initiative seeks to realize the Government's goal of making Spanish the country's first foreign language by 2020. Although similar initiatives have been announced before, this time the creation of an implementation body—the Secretariat for the Implementation of Spanish (SIS)—responsible for raising public awareness and coordinating projects that promote the acquisition of Spanish language proficiency is a concrete step to realize the state's goal.

The Secretariat is headed by a full-time Director and employs persons with competency in foreign languages, communications, project management, and so on. The Secretariat operates under the aegis of a Cabinet-appointed Steering Committee, chaired by the Trade Ministry's most senior public officer—the Permanent Secretary. The membership of the Steering Committee is drawn from ministries that are closely linked with the SAFFL Initiative, for example, Education; Science, Technology and Tertiary Education; Foreign Affairs; and Tourism. Other institutions that are key to Spanish language teaching and learning, notably UWI; the College of Science, Technology and Applied Arts of Trinidad and Tobago (COSTAATT); and, more recently, the University of Trinidad and Tobago (UTT), as well as private sector organizations such as the Trinidad and Tobago Chamber of Commerce also belong to the Steering Committee. Two subcommittees—a Language Planning Sub-committee and a Communications Sub-committee—complete the organizational structure.

The composition of the Steering Committee and Subcommittees has ensured that people who are multipliers in the language field—language professionals and educators, senior civil servants, and other professionals who occupy positions of influence in the society—have a stake in the success of the SAFFL Initiative. What this helps to do is reinforce the credibility of the SAFFL Initiative in the eyes of key stakeholders and, by extension, telegraph to the society at large the importance of SAFFL. The SAFFL Initiative is barely two years old, but the initial data seem to suggest that it is encouraging a change in public perceptions about the importance of Spanish language learning for Trinidad and Tobago citizens. We at the CLL *have* noted that the SAFFL Initiative has stimulated demand for Spanish language proficiency both among students and members of the public who access our courses.

A University Language Policy

This brief description of the SAFFL Initiative shows the potential of a national language policy for providing strategic direction and putting language learning on the national agenda. It is argued that a university language policy can serve the same function in an institutional context. The implications of a university language policy, firstly in contexts where such policies are common and then in the UWI context where such a policy is being proposed, will conclude the reflections in this paper.

The Situation in the US

The concept of a university language policy is fairly common in prestigious colleges and universities in the US. Students are often required to complete a number of semesters of language study as part of the general curriculum requirements. Although this policy is often cast in terms of a mandatory foreign language requirement, the net effect is that students continue to develop their foreign language proficiency or begin to acquire such proficiency in the course of their undergraduate education. The foreign language requirement is a proven way to extend language learning in the US higher education sector. What is less certain is whether students who think of the foreign language requirement as an obligation emerge with a more positive attitude

to language learning. In other words, while mandatory courses *extend* language learning, it is debatable whether they *promote* language learning and intercultural competence among the target population.

Indeed, in a paper entitled "Globalization and 21st Century Competencies: Challenges for North American Higher Education" (Fantini, Arias-Galicia, & Guay, 2001), the authors' strong plea for "competencies appropriate for the 21st century" and their singling out of second language proficiency and intercultural competence among these, suggests that despite the generalization of mandatory foreign language requirements, the US higher education sector is not meeting its objectives in the take-up of foreign language learning. On the other hand, a statement by President Margaret Lee (2006) of Oakton Community College, Illinois, underscores the importance of foreign language and intercultural competence even for the community college sector, traditionally regarded as second tier in the highly stratified US tertiary education sector. Lee said that "you can't live in the world today, and you can't do business in the world today, unless you are a global citizen," and added that while community colleges are meant to serve the community, "we do live in a world that is so small now that the 'community' is the people on the planet."

The growing realization of the paucity of foreign language skills in the US and the consequences of this for trade and investment, and recently for national security and defence, led in 2006 to the launch of the National Security Language Initiative (NSLI). The NSLI will "dramatically increase the number of Americans learning critical need foreign languages such as Arabic, Chinese, Russian, Hindi, Farsi, and others through new and expanded programs from kindergarten through university and into the workforce" (U.S. Department of State, 2006).

This new focus will undoubtedly have a knock-on effect in colleges and universities, with administrators and language educators revisiting their current language policies to determine how to extend and promote language learning among those in tertiary education.

The Situation in Europe

In Europe, "the aim of language learning is to develop individual plurilingualism and pluriculturalism," this according to Joseph Sheils, the Head of the Modern Languages Division of the Council of Europe, the body charged with responsibility for language use, and language learning and teaching in Europe. In Europe, the focus is on language learning for all, rather than as the "preserve of any social or intellectual elite" (Sheils, 2001). The three key planks of the European approach to language policy formation are that: 1) language learning is a right for all, 2) individuals must be facilitated to develop their plurilingualism and pluriculturalism, and 3) Europe's linguistic heritage is a source of enrichment. These understandings have led to a comprehensive approach to developing and promoting language learning in sectors ranging from primary to adult education, straddling majority language, minority and regional languages, and, more recently, community languages.

One recent initiative in the higher education sector is a proposal to form a Higher Education Language Policy (HELP) network. The decision to establish this network was one of the outcomes of the European Network for the Promotion of Language Learning Among All Undergraduates (ENLU) closing conference held in Nancy, France in April 2006. Conference deliberations on the importance of university language policies and the necessity of taking both top-down and bottom-up strategic action to realize the goal of making language competence a core component of undergraduate curricula resulted in a call for a formal structure to coordinate European efforts in this area.

Although the concept of language learning as a right for all implies work on all educational fronts, there is nevertheless an expectation that universities have a *special* role to play in supporting language learning and teaching through the research in which they engage, as, for example, the research that is expected to support the HELP network. According to Berthoud (2001):

> Universities must reflect on their specific contribution in their dual role as providers of education and research…they must

respond to the new linguistic and cultural needs through their educational structures while at the same time anticipating future needs through their research structures .... However, in order to develop and make educational and academic choices relating to language, universities must develop a language policy, which will direct their choices. … Universities must become actors in language policy and be recognised as such in the political, economic and professional worlds.

What the European model underscores is the need for universities to drive the language agenda, not only by ensuring full coverage of language learning needs through languages for all programmes within their institutions, but also by adding value to foreign language education through the conduct of research.

This conceptualization of the way in which the language sector in higher education is expected to act—as a promoter of language learning and a driver of research—is indeed one of the acknowledged goals of higher education. A primary mission of higher education is "to contribute to the development and improvement of education at all levels" (UNESCO, 1998). There is widespread agreement that, "owing to the scope and pace of change, society has become increasingly knowledge-based so that higher learning and research now act as essential components of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations" (UNESCO).

A Language Policy for UWI, St. Augustine

In a document presenting a draft language policy for the St. Augustine Campus of UWI (Carter, 2007), I make the point that:

In the globalised higher education sector, a curriculum devoid of a focus on communicative and intercultural competence will be judged to be deficient, failing to provide opportunities for its beneficiaries to acquire a vital skills set. UWI graduates who do not have communication in foreign languages as a

key skill will find their prospects for employment and for academic and professional mobility very constrained whether at the national, regional or international level. (p. 2)

The document continues:

To raise institutional awareness of the importance of foreign language skills what is required is a policy statement showing that the University acknowledges that foreign language competence adds value to undergraduate and graduate study and endorsing foreign language competence as a strategic institutional, national and regional goal. Moreover, the University of the West Indies St. Augustine Campus must project itself as the visionary and credible voice on languages in the national education sector, leading from the front in 2007 as it did in 1997 .... What is needed is a broad framework that promotes the added value of foreign language competence; that underscores the verticality of language learning throughout the education system (rewarding previous language study at secondary school) and recognises language learning as a lifelong pursuit. That framework should also emphasise diversification in the provision and choice of languages. The last point needs to be stressed, for such a perspective will accommodate both specialist and non-specialist language learning and the latter at varying degrees of proficiency. Additionally, unlike the SAFFL initiative, which designates a first but to date is silent on the place and role of *other* languages, a focus on diversification in choice of languages will not result in the promotion of Spanish at the expense of other languages. Instead, diversification of choice of languages would mean a continuing role for French as an important regional and world language; an enhanced role for strategically important languages like Arabic, (Mandarin) Chinese, Hindi, Japanese and Portuguese; and a place among non-specialist offerings for

heritage languages such as French-lexicon creole (patois) and Yoruba. (p. 3)

Finally, I propose the following statement:

Draft Language Policy Statement:

Foreign language competence is one of the basic competences of the tertiary educated person. It is a key to national and international citizenship in today's multilingual and multicultural world. The University of the West Indies St. Augustine Campus will promote and foster student engagement with foreign language learning as it pursues its strategic goal of embedding an international and intercultural dimension in the curriculum. (p. 3)

Conclusion

I have argued here that the CLL, established in 1997 as the medium to expand and organize the learning of foreign languages, must renew with its strategic role of putting languages on the agenda by aggressively pursuing the generalization of language learning among all undergraduates. I have further argued that the creation and implementation of a university language policy provides a rallying point around which all efforts to promote language learning can be focused. Not only will such a policy enhance language learning, but it will also make research into language education—pedagogic research as well as language policy research—a vital component of the work of this centre, as happens in other language centres. There will certainly be implications, especially resource implications, in this reconceptualization of the mission of the language centre. But if the CLL is to fulfil its developmental role as an academic unit within higher education, it must engage equally as a provider of learning and a provider of research in higher education.

UWI sets out as its mission, "teaching, research, innovation, advisory and community services and intellectual leadership" (UWI, 2007). The CLL aims to do no less in carrying out its core mission, its commercial mission and its *pro bono*

publico mission in the language learning/teaching field.

References

Berthoud, A-C. (2001). *Reference document for a European university language policy: A challenge for the "Task Force on European Language Policy."* Retrieved February 28, 2007, from http://web.fu-berlin.de/elc/bulletin/7/en/berthoud.html.

Bissar, D. (2000). Assessment on a fully accredited Open Language programme: Achieving beneficial backwash in a standardised scheme. In A. Hübner, T. Ibarz, & S. Laviosa (Eds.), *Assessment and accreditation for languages: The emerging consensus?* (pp. 37–47). London. CILT.

Brierley, W. 2006. *Can you give credit within an undergraduate degree programme for beginners' French.* Retrieved February 28, 2007, from http://www.ucml.org.uk/documents/credit_for_beginners_language.doc

Broady, E., & Kenning M-M. (Eds.). (1996). *Promoting learner autonomy in university language teaching.* London: CILT.

Byrne, N. (2006, Autumn). AULC/DfES Student Survey. *Higher*, *15*, 3. Retrieved March 23, 2007, from http://www.cilt.org.uk/pdf/pubs/bulletins/higher_15.pdf

Carter, B. (2006). *Teacher-student responsibility in foreign language learning.* New York: Peter Lang.

Carter, B. (2007). *Introducing a language policy at the University of the West Indies, St. Augustine.* Unpublished manuscript.

Council of Europe. (2001). *Common European Framework of References for Languages: Learning, teaching, assessment.* Cambridge: CUP.

Dörnyei, Z. (2003). Attitudes, orientations, and motivations in language learning: Advances in theory, research, and applications. In Z. Dörnyei (Ed.), *Attitudes, orientations and motivations in language learning* (pp. 3–32). Malden, MA: Blackwell Publishing.

Fantini, A. E., Arias-Galicia, F., & Guay, D. (2001). *Globalization and 21st century competencies: Challenges for North American higher education.* ("Understanding the differences:" A Working Paper Series on Higher Education in Mexico, Canada and the United States. Working paper no. 11). Retrieved March 23, 2007, from http://www.pucp.edu.pe/cmp/docs/nafta_hs.pdf

Fay, M., & Ferney, D. (Eds.). (2000). *Current trends in modern languages provision for non-specialist linguists.* London: CILT.

Ferney, D. (2000). Introduction. In M. Fay & D. Ferney (Eds.), *Current trends in modern languages provision for non-specialist linguists* (pp. 1–11). London: CILT.

Freed, B. F. (Ed). (1991). *Foreign language acquisition research and the classroom.* Lexington, MA: Heath.

Horwitz, E. K. (1987). Surveying student beliefs about language learning. In A. Wenden & J. Rubin (Eds.), *Learner strategies in language learning* (pp. 119–129). London: Prentice-Hall.

Lee, M. (2006). *U.S. University Presidents Summit: Quotes from University Presidents: Anticipating the U.S. University Presidents Summit on International Education, January 5–6, 2006.* Retrieved April 9, 2007, from http://www.state.gov/r/summit/58708.htm

O'Leary, C. (2000). Developing a specialist lexis and register in the higher stages of an IWLP: A teacher's perspective. In M. Fay & D. Ferney (Eds.), *Current trends in modern languages provision for non-specialist linguists* (pp. 123–138). London: CILT.

Sheils, J. (2001). *The modern languages projects of the Council of Europe and the development of language policy.* Retrieved February 28, 2007, from http://web.fu-berlin.de/elc/bulletin/7/en/shiels.html

Stern. H. H. (1983). *Fundamental concepts of language teaching.* Oxford: Oxford University Press.

UNESCO. (2007). *World Declaration and Framework for Priority Action for Change and Development in Higher Education.* Retrieved March 23, 2007, from http://portal.unesco.org/education/en/ev.php-URL_ID=7152&URL_DO=DO_TOPIC&URL_SECTION=201.html

U.S. Department of State. (2006). *National Security Language Initiative.* Retrieved April 9, 2007, from http://www.state.gov/r/pa/prs/ps/2006/58733.htm

The University of the West Indies. (2007). [*Mission statement*]. Retrieved April 9, 2007, from http://www.uwi.edu/Default.aspx

Enhancing Learning Through Technology Innovations: Lessons Learned From Online and Face-to-Face Learning in Postgraduate Education at UWI, Mona

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Abstract. This paper is a case study of the academic performance of two groups of postgraduate students. Group A was taught by online mode and Group B by face-to-face method, by the same lecturer, in a master's degree programme in educational administration, at The University of the West Indies (UWI), Mona. The course "Theories of Organizations" is a one-semester course usually offered in the first semester every academic session. The performances of the two groups of postgraduate students were compared in the mid-semester, end-of-semester, and the overall assessments. It was found that the online students performed better than face-to-face students in the mid-semester assessment, while face-to-face students performed better than online students in the final assessment. The final overall results for the course indicated a significant difference in the performance of both groups of students, with the face-to-face group having a better overall performance than the online group. This paper also discussed the problems encountered by both groups of students, other problems identified by the course lecturer, and the implications of all the findings for postgraduate education at UWI and in the Caribbean region.

Introduction

During the first part of the last century, distance education was considered sub-standard and looked upon with disfavour in many countries. At that time, classroom teaching and learning were so popular that anything short of classroom education was regarded as an inferior type of education in many countries. From the middle of the last century, a paradigm shift in teaching and learning became evident in the educational systems of many developing countries. The paradigm shift was from the teacher and his or her teaching to the learner and his or her learning. This shift of emphasis from the teacher to the learner has a positive impact on the credibility of distance education. Recent trends in postgraduate education all over the world indicate a positive change in attitude of people towards distance education.

The growth of information and communication technologies (ICTs) in the last two decades in many parts of the world has been phenomenal. Today, the quantity of information available in the world is greater than ever before, and this knowledge revolution has brought with it a wide gap between developed and developing economies in terms of disparities in resources and access to information. For example, according to the 2001 *Human Development Report* (United Nations Development Programme [UNDP], 2001), the number of television sets per 1,000 inhabitants in Africa ranges from 1 in Eritrea to 6 in Ethiopia, as compared to 322 in Trinidad and Tobago, 469 in the Czech Republic, and 805 in the United States (US). The number of computers per 1,000 inhabitants ranges from about 1 in Burkino Faso, 27 in South Africa, and 38 in Chile to 172 in Singapore and 348 in Switzerland. There is also an average of 1 Internet user per 5,000 persons in African countries compared to 1 user per 6 persons in Europe and North America. Three major problems facing the development of ICTs in education in developing countries are costs, availability of electric power, and constant power cuts. These are serious problems that must be addressed before developing economies will be able to "catch up" with developed countries in the use of ICTs in education.

Online and Traditional Classroom Instruction

The main objective of online instruction is to increase access to educational programmes and

services. It provides an alternative teaching and learning method from the traditional classroom teaching and learning. Online education is of great importance to the island states of the Commonwealth Caribbean, especially for non-campus countries of UWI. There are geographical and psychological distances and these present a challenge to the teaching and learning processes. During online instruction, the learner is expected to assume the onus of his/her own learning while the teacher assumes the role of a facilitator. The physical distance between the teacher and the learners is bridged by the learner-learner and the learner-teacher interactions during conferencing and chat sessions in the Virtual University Programme.

There are many advantages of online education. Dhanarajan (2001) highlights the various forces contributing to the desire to go online, including:

1. Access

Increased access provided by online education is crucial in the fulfilment of public demands for higher and lifelong education in the Caribbean region, especially at this time of global economic recession. Online course can help individuals and institutions to overcome the barriers of time and distance, especially in postgraduate education.

2. Cost

The debates on the cost of online education are still going on in many parts of the world. It is widely accepted that online education is expensive, especially at this time when many school systems are facing financial problems and budgetary cuts. It is hoped that before long the cost of online education would be reduced drastically, especially when institutions are able to make a judicious choice of the technology they need and make effective use of such technology. Again, the cost of online education can be reduced through partnership and curriculum sharing with other educational institutions and organizations.

3. Technology

It is widely accepted that information technology and web-based educational technology are empowering tools for learning and acquiring knowledge.

4. Upgrading of Skills in the Workplace

The workplace today requires the upgrading of skills and the acquisition of new knowledge, and these can be achieved through online education.

5. Globalization

A global economy based on skills and knowledge, and free trade and open markets is fast developing in many parts of the world. Cost-efficient web-based educational programmes can help to facilitate the development of a global economy in the near future.

6. Job Creation

Online education programmes have proved very useful to many professionals in higher education, especially academic and administrative staff, libraries, and technical staff networking with computers in many learning organizations in the Caribbean and in different parts of the world.

This paper deals with the comparative study of the performance of online and face-to-face graduate students in educational administration at UWI.

Background to the Study

In the last decade of the 20th century, the Caribbean region focused on the fulfilment of public demands for higher education, lifelong learning, and the effective use of information technologies in education. The objectives have been to create open and lifelong learning societies, to overcome the problems generated by traditional classroom teaching and learning, to meet the learning needs of individual students at all levels of education, and to prepare citizens for information technology and the globalization age of the 21st century.

The School of Education at UWI, Mona, recently introduced online instruction in master's degree programmes in teacher education using Virtual University software. The main objective of the online instruction is to increase access to educational programmes and services, especially for students in the Caribbean region. The Virtual University is software for online course delivery and management, and ED63A: Theories of

Organizations was offered for the first time through the Virtual University software in September 2001.

Methodology

In the first semester of the 2002/2003 academic year, the course ED 63A: Theories of Organizations was offered online and by face-to-face methods. A total of 21 graduate students enrolled in the online course while another 21 graduate students enrolled in the traditional classroom instruction, referred to in this paper as face-to-face teaching and learning. The two groups of students were given two assessments: the mid-semester and the end-of-semester assessments, and their academic performance in the course was compared.

The two groups of students were taught by one lecturer. The mid-semester assessment was graded out of 40% while the end-of-semester assessment was graded out of 60%. The postgraduate examination regulation stipulates that in order to pass, a candidate must obtain at least 50% of the marks in both the mid-semester and the end-of-semester assessments. The marking scheme for such a graduate course is as follows:

Passing Grade

70 – 100%	A
60 – 69%	B+
50 – 59%	B
0 – 49%	F

The online students registered for the course from different locations and were briefed through online communications, including e-mails, on the expectations for the course and how the course would be offered and graded. The online students communicated with the lecturer through conferences, sub-conferences, and chat sessions organized in the Virtual University programme, and by e-mail, fax, and telephone messages. At the end of the course, the two groups were asked to state the problems they had encountered during the course and to make suggestions for improving the course in the future. The test scores of the two groups of students in mid-semester and end-of-semester assessments were compared to find out if there was a significant difference in the performance of the two groups in the course.

The Findings

The findings are grouped as follows: Performance of the two groups of students in the mid-semester and end-of-semester assessments, and in the overall assessment. The problems identified by the two groups of students and the course lecturer, as well as suggestions for improving the course offering, are highlighted.

Students' Performance in the Mid-Semester Assessment

The mid-semester assessment was in the form of a take-home long essay assignment of about 15 pages, which was graded over 40%. The performance of both online and face-to-face students is shown in Table 1.

Analysis of the mid-semester assessment shows that online students' scores ranged from 23 to 30 marks while that of face-to-face students showed greater disparity and ranged from 22 to 31. The mean score and the standard deviation for the online group are 26.43 and 2.13 while that of the face to face group are 25.66 and 2.31, respectively.

The lower mean score of 25.66 for face-to-face students indicates a lower performance by face-to-face students when compared to online students with a higher mean score of 26.43. This means that online students performed slightly better than face-to-face students in the mid-semester assessment.

Students' Performance in the End-of-Semester Assessment

The end-of-semester assessment was in the form of a written examination. Students were asked to do three out of five questions in three hours, and the examination was graded out of 60%. The performance of the two groups of students is shown in Table 1.

Analysis of the end-of-semester assessment indicates that online students' scores ranged from 16 to 43 marks, showing greater disparity than that of the face-to-face students, which ranged from 30 to 44. The mean score and the standard deviation for the online group are 32.71 and 7.60, while those of the face-to-face group are 37.86 and 3.75, respectively.

Table 1. Students' Performance in the Mid-Semester, End-of-Semester, and Overall Assessment

S/No	Online Students			Face-to-Face Students		
	40	60	100	40	60	100
1	28	43	71	31	39	70
2	29	34	63	28	42	70
3	24	40	64	26	41	67
4	26	37	63	28	43	71
5	24	36	60	26	40	66
6	28	34	62	23	30	53
7	24	36	60	22	36	58
8	28	36	64	24	32	56
9	28	43	71	24	38	62
10	26	31	57	24	36	60
11	25	35	60	24	36	60
12	30	38	68	26	38	64
13	24	30	54	26	44	70
14	28	36	64	27	43	70
15	28	33	61	24	33	57
16	28	30	58	28	35	63
17	24	33	57	28	38	66
18	28	32	60	25	38	63
19	28	16	44	28	37	65
20	33	16	39	22	41	63
21	24	18	42	25	35	60
Total	555	687	1,242	539	795	1,334
Mean	26.43	32.71	59.14	25.66	37.86	63.52
SD	2.13	7.60	8.49	2.31	3.75	5.15

The face-to-face group's higher mean score of 37.86 and the lower standard deviation of 3.75 indicate a higher performance over online students with a lower mean score of 32.71 and a higher standard deviation of 7.60. Three of the online students failed the end-of-semester assessment by scoring 16, 16, and 18 marks, respectively. The mean difference between online and face-to-face groups was 5.15, and this was a significant difference in the performance of the two groups of students.

Students' Overall Performance in the Course

The mid- and end-of-semester assessment scores were combined for both groups of student to determine the students' overall attainment in the course and their overall performance. In Table 1, the online students' overall scores for mid- and end-of-semester ranged from 39 to 71, while that of the face-to-face group ranged from 53 to 71. The mean score and the standard deviation for the online group were 59.14 and 8.49, while that of the face-to-face students were 63.52 and 5.15, respectively.

The face-to-face students' higher mean score of 63.52 and the lower standard deviation of 5.15 indicate a higher overall performance over online students with lower mean scores of 59.14 and higher standard deviation of 8.49. Three of the online students who scored 44, 39, and 42 failed the course. The mean difference between online and face-to-face overall scores is 4.38, and this indicates a significant difference in the performance of the two groups of students.

Discussion of Results

From the analysis of the test scores of the two groups of students, online students performed slightly higher than face-to-face students in the mid-semester assessment, with a mean difference of 0.77. The higher performance of the online students in the mid-semester assessment was attributed to the fact that they did more readings and were more familiar with the course materials than the face-to-face students. However, the performance of the two groups indicated a mean difference of 0.77, which was not significant.

There are significant differences in the performance of both groups of students in the end-of-semester and overall assessments of the course. The mean difference for the end-of-semester for the two groups is 5.15 and 4.38 for their overall performance on the course, and these indicate significant differences in the performance of the two groups of students. Three online students who failed the end-of-semester test also failed the course. All 21 face-to-face students passed the course. The face-to-face students had the advantage of face-to-face contact with the course lecturer and participated to a great extent in classroom discussions on the course, and these contributed to their higher performance in the course.

The Problems Encountered in the Course by the Groups of Students

1. *Time constraint*. Many of the online and face-to-face students complained that the course was challenging and extensive, and that there was not enough time to do the readings and to prepare for the assessments. Most of the students from the two groups have full-time jobs, which they combined with the course. Face-to-face students attended lectures from 4–7 p.m. in the evenings about two or three times a week, and therefore it was difficult for them to do the readings fully.

2. Availabilty and cost of textbooks. Face-to-face students complained about the availability and cost of prescribed and recommended textbooks, especially when the books have to be ordered from abroad. The online students felt that the cost of downloading and printing course material was high.

3. *No instant feedback from the course lecturer*. Many of the online students stated that instant feedback on their submissions from the course lecturer was not always available, while others said that the lecturer's comments were often brief.

4. *Three hours of evening lectures*. Face-to-face students complained that the three hours for one lecture (4–7 p.m.) was long, and usually asked for a short break midway during the lectures, which was usually granted.

5. *Computer skills*. Many online students were not able to access notices and other course information from the computer, and this was due to a lack of adequate computer skills.

6. *Power cuts due to bad weather*. Many students complained about power cuts due to bad weather, and others complained about heavy rains and flooding during the months of September, October, and November. Frequent power cuts affected students' access to the Internet and Virtual University campus.

7. *Opportunity to improve computer skills*. Some students said that the online course provided them the opportunity to improve their personal computer skills especially in accessing information from the Internet and the Virtual University.

8. *Happy to study at their homes*. Many online students said that they were able to study at their convenience at home and at their own pace. They appreciated the use of computers in facilitating their learning.

Problems Encountered by the Course Lecturer

The following problems were encountered by the Course Lecturer:

1. *Late submission of assignments*. Some online and face-to-face students did not submit their mid-semester assignment on time and they requested an extension of time for the following reasons: sickness, stress, computer problems, and power cuts. Late submission of assignments

caused a delay in grading and in sending feedback to the students.

2. ***Uploading the course readings***. There was a problem in uploading the course readings in the Virtual University system at the beginning of the course. This problem was later resolved by the creation of more bytes for the course readings.

3. ***Extension of course timetable***. The course timetable was extended for an additional two weeks to enable the students to complete the readings, contribute to conferences, and revise for the end-of-semester assessment.

4. ***Students' overall performances***. Three online students failed both the end-of-semester and the overall course assessment. All the face-to-face students passed the course, that is, a 100% pass rate, while online students had a 86% pass rate.

Conclusion

The rapid growth in ICTs is a great challenge to the education sector of the national economy of many countries (Murugan, 2002). The educational systems of many nations are being challenged to provide learning opportunities for citizens of all ages. Universities and other higher educational institutions must play a leading role in meeting these economic and technological challenges. The universities, in particular, have a responsibility for providing greater access for higher and lifelong education for the citizens.

The Caribbean region consists of many island states separated by large bodies of water, and therefore online education, especially in higher education, can help to remove the need for the learner to be present at an instructional site at a designated time. The Virtual University programme has the potential to make education and training more flexible and affordable to a large number of people. As Monteith and Smith (2001) put it, online instruction offers possibilities that would not otherwise be available because of cost, time, or location constraints, especially for working adults.

Some vital strategies should be introduced to improve the quality of delivery of courses and access to the Virtual University programmes. These strategies should include training and retraining of Virtual University educators and students, partnership with other educational organizations, and a skilful mixture of online education with face-to-face teaching and learning methods, according to Ezenne and Cook (2002). Online education offers a very good opportunity to higher education students in the Caribbean region.

References

Dhanarajan, G. (2001). *Online learning – A social good or another social divide?* Retrieved from www.col.org/colweb/site/pid/3673

Ezenne, A., & Cook, L. (2002). Virtual U: Online teaching and learning in higher education. *Caribbean Journal of Education, 24*(1), 63–73.

Monteith, M., & Smith, J. (2001). Learning in a virtual campus: The pedagogical implications of students' experiences. *Innovations in Education and Teaching International, 38*(2), 119–132.

Murugan, K. (2002, March) *Controlling context-free information and communications technologies in distance education*. Paper presented at the International Conference on the Problems and Prospects of Education in Developing Countries, UWI, Cave Hill, Barbados.

United Nations Development Programme (UNDP). (2001). *Human development report 2001: New technologies work for human development*. New York: Oxford University Press. Available from www.undp.org

Online Delivery of a Mathematics Course
in a Distributed Environment:
The Case of UWI Distance Education Centre

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Abstract. The University of the West Indies Distance Education Centre (UWIDEC) was created in 1996 to facilitate distance delivery of programmes offered by UWI. Since 2002, UWIDEC has been incorporating the use of ICTs in the delivery of its programmes and courses. Globally, there has been debate on the pedagogical effectiveness of online courses in general and specifically the quantitative subject areas including mathematics. Taking into consideration the various arguments for and against the use of online learning, as part of a pilot programme, UWIDEC took a decision to change the mode of delivery of the course *Mathematics for Social Sciences* from the conventional synchronous mode to the online mode. This paper reflects on the experience of the UWI Distance Education Centre in its pilot delivery of *Mathematics for Social Sciences* to students across the English-speaking Caribbean. The authors review the key issues that should be considered in changing the delivery mode of mathematics courses from the conventional, synchronous mode to the online mode, and provide recommendations for improving the online delivery of mathematics courses.

Introduction

The University of the West Indies Distance Education Centre (UWIDEC) was created in 1996 to facilitate distance delivery of programmes offered by The University of the West Indies (UWI). Since 2002, UWIDEC has been implementing online course delivery. Globally, there has been much debate on the pedagogical effectiveness of online courses in general and, specifically, on the differences in performance between those who pursue face-to-face studies versus those doing online studies. In 2004, UWIDEC took a decision to formalize its online course delivery by moving from its traditional mode of course delivery to a blended approach, which involved online learning as a major component. The Level 1 course, *Mathematics for Social Sciences* (which forms part of the B.Sc. Management Studies programme) was among the first courses to be offered as part of UWIDEC'S blended approach. This paper therefore reflects on the experience of UWIDEC in its pilot delivery of the course. In so doing, the authors discuss the background to the delivery of the course, describe the structure of the course, and review the experiences and possibilities of offering a mathematics course online. The authors argue that while media and technology can have an impact on effectiveness, more emphasis should be placed on curriculum philosophy and approaches, which motivate the students to learn.

UWI Distance Education: Background and Current Delivery Model

Distance education involves an approach in which learners and teacher, and therefore the educational institution, are separated by time and/or distance (Bellot, McClenan, & Shears, 1998).

In 1997, UWI recognized that the three campuses (St. Augustine, Trinidad; Mona, Jamaica; and Cave Hill, Barbados) could not meet the increasing educational demands of a growing regional population. A Distance Education Centre (DEC) was established that year by the university to meet the needs for the delivery of distance education programmes to the people in the English-speaking Caribbean.

Distance education sites were established in all the English-speaking countries that support UWI. Currently, distance education programmes are offered at 31 sites in 16 countries: Anguilla, Antigua and Barbuda, the Bahamas, Barbados,

Belize, the British Virgin Islands, the Cayman Islands (Grand Cayman), Dominica, Grenada, Jamaica, Montserrat, St. Kitts-Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, and the Turks and Caicos Islands. It is at these locations that students access the programmes of study as well as the student support services provided by the institution. UWIDEC is therefore set up to facilitate distributed learning in the true sense of the term, and facilitates academic and administrative staff of UWI in the development of all distance programmes. Academic staff of UWI have ultimate responsibility for the academic content and quality of these distance education programmes.

UWIDEC's programmes include the B.Sc. degree in Management Studies (Levels I to III); the B.Ed. in Educational Administration (Levels II and III); Level I courses in the B.Sc. Accounting and B.Sc. Economics; the Certificate in Gender and Development Studies; and the Certificate in e-Governance. The focus of this paper is the Level I course *Introduction to Mathematics*, which is offered as part of the B.Sc. Management Studies, B.Sc. Accounting, and the B.Sc. Economics degree programmes.

The Transition to Blended Learning in the UWIDEC Context

All UWIDEC courses were delivered up to 2004 via a mixed mode of print materials, face-to-face tutorials, and teleconferences. Among the contents of the typical print package was the Course Material, which contained the essential course content. This material guided the student through 10 weeks of work; each week's work was delivered as a "unit" with clear instructions as well as practice assignments, readings, and study questions. Another component of the print package was a set of Course Readings that supported the Course Material. The final component of the print package was the Course Guide, which relayed course information, including the course outline, study hints, schedules for the course, and instructions regarding assignments and examinations. Supplementing the print package was a series of teleconferences and local tutorials. The frequency of these varied, depending on the needs of the particular course.

Teleconferences and local tutorials were used primarily for lectures and for question and answer sessions with the students. From a pedagogical point of view, UWIDEC's delivery approach prior to 2004 clearly did not make much use of asynchronous, computer-based technologies.

The Wikipedia defines blended learning as a "combination of instructor-led training and e-learning or a combination of 'face-to-face' education and distance learning" (Blended learning, 2005). It is emphasized here that blended learning refers to a combination of educational tools and resources which includes elements of interaction with persons either face-to-face or electronically. The combination of tools used in blended learning may include technology-based materials as well as traditional print materials. Blended learning can involve group and individual study as well as structured, paced study or flexible, unpaced study.

While there has been much debate about the effectiveness of technology-based learning versus face-to-face delivery (e.g., Conger, 2005; International Distance Education Certificate Centre [IDECC], 2005; Ramage 2005), the final impetus for UWIDEC to move away from synchronous delivery was influenced by practical considerations. With increasing student numbers over a wider geographical spread and greater demands being placed on the audio-conferencing network, it was decided to move toward more asynchronous delivery (Marshall, 2004). This incorporation of more asynchronous delivery using computer-based technologies into the mix is considered a move toward "blended learning." More specifically, while UWIDEC students continue to be provided with a range of learning resources, the emphasis is now placed on asynchronous modes of delivery, with the ultimate aim of not having any physical tutorial/lecture attendance at all. This is in keeping with what has been described as the standard model of online education by Roberts, Jones, and Romm (2000), who state that "advantages of the standard model include better access to resources for students, and opportunities for greater interaction; disadvantages include the amount of staff time needed to facilitate both on-campus and off-campus delivery effectively." This incorporation of asynchronous delivery positions UWIDEC's distance education model within the fourth generation models as

defined by Taylor (2001) and initiates the movement to what Taylor calls the fifth generation distance education model.

To initiate this move to blended learning, UWIDEC established a blended learning project, headed by the Curriculum Specialist/Campus Coordinator, St. Augustine. The project was intended to prepare a set of pilot courses during the 2005/2006 academic year for incorporating more asynchronous, computer-based technologies in time for delivery in the 2006/2007 academic year. *Mathematics for Social Sciences* was one of the courses selected to be part of the pilot project.

A Critical Look at the Pedagogical Underpinnings of the Traditional versus Blended Approach in Distance Education

The traditional model of distance education adopted by UWIDEC prior to 2004 and outlined above has been described by Otto Peters, as cited in Michael Parer (1993), as industrialization of education. Peters used the industrial model to describe programmes such as UWIDEC's B.Sc. Management Studies degree programme prior to 2004 because he saw the "industrial" elements of rationalization, division of labour, mechanization, assembly line, mass production, planning and preparation, standardization, and functional change and objectification.

Peters (as cited in Parer, 1993) sees rationalization as the transfer of knowledge and skills of a teacher to an unlimited number of students by a method that is detached and constant. Peters points out that the development of the course takes place in an "assembly line" manner, with various specialists carrying out different tasks and mass producing the course for a large number of scattered students. The main criticism of Peters' theory on distance education is the lack of human interaction.

Theorists such as Börg Holmberg insist that to be effective, distance education must have a human face. Desmond Keegan (1996), writing on Holmberg's theory, says that the single most important element in education is learning by individual students. Parer (1993), also commenting on Holmberg's work, stresses the importance of guided personal conversation, which can be simulated, as is the case with study guides or course material used in distance; or real, as in face-to-face conversation.

Holmberg suggests that in order to have a human face, distance education materials must stimulate and provoke students to think about the subject and apply it to their professional life. Holmberg says that learning materials developed with this concept of guided personal conversation would present the following characteristics:

- Easily accessible presentations of study matter. Clear, somewhat colloquial language in writing that is easily readable, and has moderate density of information

- Explicit advice and suggestions to the student as to what to do and what to avoid, what to pay particular attention to and consider, with reasons provided.

- Invitations to an exchange of views, to questions, to judgements of what is to be accepted and what is to be rejected.

- Attempts to involve the student emotionally so that he or she takes a personal interest in the subject and its problems.

- Personal style including the use of the personal and possessive pronouns.

- Demarcation of changes of themes through explicit statements, typographical means or in recorded, spoken communications, through a change of speakers, or through pauses. (Holmberg, as quoted in Keegan, 1996, p. 96)

Holmberg forecasts that if a distance education programme is prepared following these principles, it will be attractive to students, will motivate them to study, and will facilitate learning. UWIDEC's degree programme follows these principles suggested by Holmberg in so far as the study matter is clear, there is explicit advice in the form of a course guide, exchanges of views take place at teleconferences and tutorials, and there are attempts to involve students. However, other theorists suggest that this might not be sufficient to facilitate learning.

One such theorist is Michael Moore, who recognized that distance education involves mainly adult students who are required to take responsibility for their own learning. Moore

stresses that true learning takes place when students reconstruct ideas and skills within the context of their lived experiences and the skills they possess (Parer, 1993). Writing in the phenomenological tradition, Moore emphasizes the role of life experiences in facilitating learning. This tradition of focusing on learning through experience dates back to John Dewey (1938), who, in his classic work *Experience and Education,* made some of the most thoughtful observations about the connections between life experiences and learning. Dewey and others belonging to this school argue that for learning to happen through experience, learners must make a connection between what they are being exposed to and their past experience, and they must be able to see the future implications of this connection.

Oblinger and Hawkins (2006) take an even wider view by pointing out that learning occurs as a result of motivation, opportunities, an active process, and interaction with others in addition to the ability to transfer learning to a real-world situation.

For Saba (1999), quoted in Ramage (2002, p. 4), the pertinent question is whether there is enough interaction between learner and instructor for the learner to find meaning and develop new knowledge. A significant question then arises: How can past experiences impact on present learning to facilitate new ways of thinking and doing in the future?

Pedagogical Underpinnings of the Blended Approach

The importance of moving toward a more blended approach to distance education delivery incorporating asynchronous learning has been identified by Peters (2000), who states that "university graduates in the emerging information society will have to have qualifications and competencies that are different or differently weighted from those in the industrial society with which we are familiar" (p. 11). Pointing to the possible inadequacies of the industrial model in our current information age, Peters states that:

> Learning and teaching at university must be oriented to a much greater extent than before to the principles of continuing education and lifelong learning. It must

have an egalitarian character and be open as well as student-practice and future-oriented. It will have to proceed with flexible teaching and learning programmes which impart not only cognitive but also communicative and collaborative competence. (p. 13)

Peters sees this transformation in higher education being achieved through new approaches, which suggest a blended approach involving self-study, study in the digital learning environment, and taking part in what he calls "teaching" events such as live scientific discourses or social intercourse.

While the model of programme delivery adopted by UWIDEC prior to 2004 followed the industrial model, the blended learning approach requires a more flexible approach to programme delivery. The blended learning approach is based on constructivist thinking and focuses on student-centred learning in an open, flexible environment (Taylor, Postle, Reushle, & McDonald, 2000). For this method to be successful, however, particularly for quantitative courses such as mathematics, specific attention must be paid by implementers to a number of challenges posed by the very nature of these methods. O'Neill, Singh, and O'Donoghue (2004) point out pedagogical and other challenges for students and lecturers. For the students, these challenges include getting them to adapt to a change in learning processes, dealing with the issue of isolation or lack of face-to-face interaction, and providing prior experience for students in using information technology. With regard to lecturers, O'Neill et al. point out that there are challenges of (a) ensuring quality in the teaching and learning with a shift in teaching methods, (b) changing traditional teaching styles to approaches where learners can control their own learning, and (c) accommodating changes in workload.

Moving from an industrial, traditional model of distance education to a blended approach clearly has an impact on the structure of courses and programmes. The nature of teaching and learning, as well as the operations supporting these, must adjust in order for there to be success. Many writers tend to focus on the structural requirements and on the differences between modalities, that is, the no significant difference phenomena. Thus far,

little attention has been paid in the literature to curriculum review and redesign as a necessary activity in the move from traditional to blended learning.

It is apparent, then, that a change in the mode of delivery requires a fundamental change in the philosophy guiding the structure and delivery of programmes, particularly quantitative subjects such as mathematics. It is suggested that a change in curriculum orientation to one that focuses on creating more inclusive, empowering environments will be necessary for us to truly benefit from the possibilities of online learning courses in mathematics at UWI.

Structure of the Online/Blended Course
Mathematics for Social Sciences

Mathematics for Social Sciences had an enrolment of 862 students at the start of the 2006/2007 academic year. The course comprised the following elements:

- A print package comprising a self-instructional Course Manual and an Activities and Assignment Booklet. The Course Manual contains the course materials for the Units that comprise the course.

- Four audio-conferences conducted by the Course Coordinator/Lecturer, which were also made available in a downloadable format on the web after the live broadcasts.

- A website that contained the following:

  - messages from the Campus Coordinator
  - the Course Coordinator's announcements forum
  - discussion forum for e-tutors
  - discussion forum for the Course Coordinator and students
  - discussion forums for the e-tutor and students (i.e., tutor-student exchange)
  - getting-to-know one another students' forum
  - chit-chat forum for students
  - course objectives and overview for each unit
  - self-assessment quizzes by unit
  - coursework (graded) quizzes
  - assignments for each unit

  - resources such as links to other mathematics websites, past examination papers, solutions to assignments, and solutions to past coursework examination papers

The website was monitored by the Course Coordinator and members of the UWIDEC blended learning team. Students were divided into e-groups of size 25. Each group was facilitated by an e-tutor with responsibility for monitoring discussions, providing feedback to students, and making mini PowerPoint presentations in the online environment, under the guidance of the Course Coordinator.

It should be noted that:

- The main criticism of Peters' (2000) theory on distance education, that is, the absence of a human face, was addressed to some extent by UWIDEC in the design of the course.

- The course design follows the principles suggested by Holmberg (as cited in Keegan, 1996) in so far as the study matter is clear, there is explicit advice in the form of a course guide, exchanges of views take place at teleconferences and tutorials, and there are attempts to involve students.

- The structure of this course fits the characteristics of a fourth generation distance model as defined in Taylor (2001).

Experiences in the Delivery of the
Mathematics for Social Sciences Course

Some Challenges for the Implementers

In moving to blended learning in the delivery of the *Mathematics for Social Sciences* course, UWIDEC experienced all the challenges enunciated by O'Neill et al. (2004).

Being the first delivery of this course in the online blended mode, there was a lack of confidence and, in some cases, competencies at the start among e-tutors, site support staff, and, more so, students.

The UWIDEC blended learning team developed and executed a pre-course module for incoming students during the period July–August 2006. Unfortunately, a significant number of

students did not attend the course. Students therefore came to the course with widely varying degrees of computer literacy, and this was manifested in their reluctance to come online and their inability to complete activities such as navigating the Internet, uploading a Word file, and locating a math symbol in Word. An ongoing complaint among e-tutors for the duration of the course was the relatively low level of participation among students.

Finding an adequate complement of trained e-tutors to facilitate 34 e-groups posed a challenge to the UWIDEC blended learning team. The reality was that the course started with an inadequate number of trained e-tutors. Furthermore, while the students had their learning curve with respect to participating in the online environment, the e-tutors had an even steeper learning curve given that students expected e-tutors to be proficient from their first online interaction.

UWIDEC, St. Augustine Campus insists that Trinidad and Tobago students entering the course with less than a Grade 2 at the Caribbean Examinations Council (CXC) General Proficiency examinations, or who have been away from CXC General Mathematics for three years or more, must complete a remedial course during the June–August period prior to the start of the online blended course. This requirement is not yet a standard across all 31 sites in UWIDEC. Students therefore came into the online blended environment with proficiency gaps in the prerequisites and expected e-tutors and the Course Coordinator to close those gaps while delivering the course over the available 12 weeks of the semester.

Students complained via e-mail that:

- they were unaware of the online blended delivery mode when they registered for the course;

- their approach to learning mathematics was incompatible with the online blended delivery mode;

- they felt isolated (and in some cases lost) without the face-to-face interaction;

- they were unable to navigate the course's web home page and perform transactions such as upload a solution to a worked assignment; and

- e-tutors took too long to respond to their posting in the discussion forum. Probing revealed that students expected real-time response.

Students made several requests for face-to-face tutorials to be re-introduced at the sites. Some sites took an informal decision to implement these tutorials prior to the coursework examination. Other sites instituted these tutorials in the last two weeks of the course. Unfortunately, once instituted, these tutorials became the primary activity for students at the sites.

Figure 1 shows the levels of participation at five key stages of the course, namely, registration, the coursework examination, two graded quizzes, and the final examination. The overall dropout rate was 18.3%. The comparative dropout rate for 2004/2005 academic year was 4.7%.
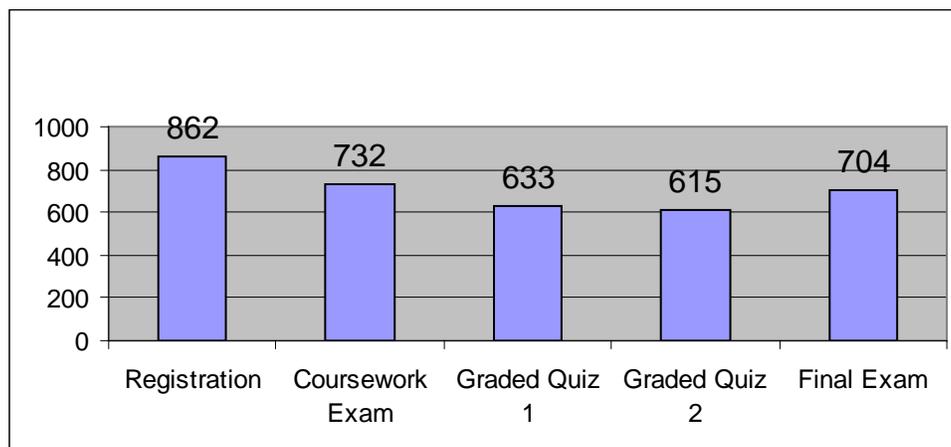
Figure 1. Participation levels – Semester I, 2006/2007.

Feedback From Students

An evaluation questionnaire was developed and administered online to students during the last week of the course by the online blended learning team. The questionnaire was designed to obtain feedback from students in nine areas, namely:

1. Satisfaction with the use of tools in the course

2. Satisfaction with aspects of the online learning experience

3. Confidence in performing tasks during the course

4. Informal interaction within e-groups

5. Knowledge and assessment of e-tutors

6. Connectivity and site support issues

7. Perception of what did not go well in the course

8. Perception of what went well with the course

9. Comparison of the online learning experience with the overall learning experience of the semester

A total of 177 questionnaires were completed. The Likert scale of 1 to 5 was used to treat the responses for the first two areas with "1" assigned to *Definitely Not Satisfied* and "5" assigned to *Very Satisfied* for the first two areas. Similar scales were assigned to the responses from the next four areas in the above list.

With respect to the first area, Table 1 shows that the respondents were (a) satisfied with the Course Coordinator's announcements; and (b) fairly satisfied with the e-tutor presentations, tutor-student exchange, students questions on the units, unit discussion forum, getting-to-know-one another forum, and chit-chat, in that order. It should be noted that whereas the Course Coordinator's Announcements required a mere "read only" response, the other tools required students to be the initiators.

Table 1. Satisfaction With the Use of Tools in the Course

Tool Used in the Course	Very Satisfied	Satisfied	Fairly Satisfied	Not Satisfied	Definitely Not Satisfied	Overall Rating	Rank
Course Coordinator's Announcements	45	54	37	10	5	3.82	1
Getting-to-Know-One Another Forum	11	24	40	35	19	2.79	6
Tutor-Student Exchange	17	39	53	23	9	3.23	3
Chit-Chat	9	12	49	33	13	2.75	7
e-Tutor Presentations	31	44	35	19	18	3.35	2
Unit Discussion Forum	14	30	49	38	14	2.94	5
Student Questions on the Units	16	32	43	36	11	3.04	4

With respect to the second area, Table 2 shows that respondents were (a) satisfied with both the number of self-assessment exercises and the coursework examination, and (b) fairly satisfied with the other aspects of the online experience. Satisfaction was lowest for "Explanation of difficult areas of the course" and "Quality of discussions based on topics & issues from the course." These aspects reflect the learning curve for the e-tutors.

With respect to performing tasks during the course, the respondents were confident in "Uploading an assignment," "Locating a posting in the course website," and "Posting a message or other information"; respondents were fairly confident with respect to all other tasks highlighted in Table 3, with the least confidence being assigned to "Starting a discussion on a course-related topic or issue" and "Composing your working of a mathematics problem using a word processor," in that order. The feedback here is consistent with the observations made in (Lyman, 1999).

Respondents agreed to a certain extent that they "knew the names & home-countries of the members in my e-group." As Table 4 shows, respondents did not get involved in informal interaction within their e-groups.

Table 2. Satisfaction With Aspects of the Online Learning Experience

Aspect of the Online Learning Experience	Very Satisfied	Satisfied	Fairly Satisfied	Not Satisfied	Definitely Not Satisfied	Overall Rating	Rank
Timeliness of response to general queries & concerns	16	40	39	21	14	3.18	5
Helpfulness of responses to general queries & concerns	17	34	46	19	7	3.28	3
Assistance in doing exercises & activities that students did on their own	15	27	47	22	15	3.04	6
Feedback on exercises & activities that students did on their own	14	29	38	24	4	3.23	4
Explanation of difficult areas of the course	18	21	38	35	17	2.91	8
Quality of discussions based on topics & issues from the course	15	24	36	40	18	2.83	9
Amount of self assessment exercises	29	46	42	18	6	3.52	1
The coursework examination	26	45	48	13	6	3.52	1
The graded quizzes	13	23	29	9	20	3.00	7

Table 3. Confidence in Performing Tasks During the Course

Task	Very Confident	Confident	Fairly Confident	Not Confident	Definitely Not Confident	Overall Rating	Rank
Posting a message or other information	33	47	29	20	7	3.58	3
Locating a posting in the course website	48	42	34	15	4	3.80	2
Deciding on the most appropriate area of the course website to make a posting	30	31	43	24	4	3.45	4
Contributing to the discussion on a course-related topic or issue	22	25	35	34	11	3.10	7
Starting a discussion on a course-related topic or issue	22	27	32	34	14	3.07	8
Asking an e-tutor to explain something you did not understand	20	37	22	27	16	3.15	6
Uploading an assignment	46	35	26	5	3	4.01	1
Composing your working of a Mathematics problem using a word processor	16	18	22	29	14	2.93	9
Using a link to search other websites	35	30	34	18	13	3.43	5

Table 4. Informal Interaction Within e-Groups

Statement	Completely Agree	Agree	Agree to a certain extent	Do Not Agree	Definitely Not Agree	Overall Rating	Rank
I knew the names & home-countries of the members in my e-group	24	28	43	24	20	3.09	1
I made friends with other members of my e-group	6	6	33	52	38	2.19	4
I engaged in light personal exchanges with other members of my e-group	4	9	35	49	32	2.26	2
I discussed matters of general interest with other members of my e-group	7	9	26	53	34	2.24	3

In their evaluation of e-tutors, respondents agreed without qualification that (a) e-tutors were knowledgeable about the course, (b) they had no difficulty finding out who was their e-tutor, (c) their e-tutor's postings were clear and well focused, and (d) e-tutors made useful postings regularly throughout the semester, in that order. Respondents agreed to some extent with statements that (a) e-tutors did what was expected of them, (b) e-tutors' performance was of a high standard throughout the semester, and (c) e-tutors' performance improved as the semester progressed, in that order. Here again, the feedback reflects the learning curve experienced by the e-tutors. Overall, respondents did not feel that they knew their e-tutors (see Table 5).

Table 5. Knowledge and Assessment of e-Tutors

Statement	Completely Agree	Agree	Agree to a certain extent	Do Not Agree	Definitely Not Agree	Overall Rating	Rank
I had no difficulty finding out who was my e-tutor	48	43	24	12	12	3.74	2
I felt as though I knew my e-tutor	12	17	27	42	37	2.44	8
I found my e-tutor to be knowledgeable about the course	34	52	29	5	5	3.84	1
I found my e-tutor's postings to be clear & well focused	31	49	41	11	10	3.56	3
My e-tutor made useful postings regularly throughout the semester	35	35	45	9	11	3.55	4
My e-tutor has done what he/she was expected to do	31	33	46	12	12	3.44	5
My e-tutor's performance was of a high standard throughout the semester	25	34	43	14	12	3.36	6
My e-tutor's performance improved as the semester progressed	20	34	33	22	12	3.23	7

Of the respondents, 67% indicated, without qualification, that they had easy access to a computer with Internet connectivity, while 60% did not use the computers at their UWIEDC site to a significant degree during the semester. There was overall agreement among respondents, as shown in Table 6, that the staff at the UWIDEC sites provided good support to students on the course. In retrospect, these staff members assisted the students in managing the increased workload as identified by Reeves (2002).

Table 6. Connectivity and Site Support Issues

Statement	Completely Agree	Agree	Agree to a certain extent	Do Not Agree	Definitely Not Agree	Overall Rating
I had easy access to a computer with Internet connectivity	59	35	25	13	9	3.87
I used a computer at my UWIDEC Site most of the time	10	12	26	36	36	2.37
I found that the staff at my UWIDEC Site provided good support	37	39	39	12	9	3.61

Student Performance

Overall, the pass rate for the coursework examination was 89.3%. The distribution of the marks is shown in Figure 2. The comparative pass rate for the 2004/2005 academic year was 55%.
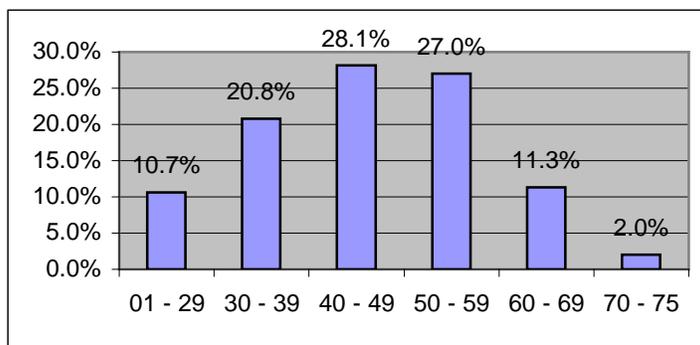
Figure 2. Performance for coursework examination.

Pass rates for the graded quizzes were 84.5% and 61.2% respectively. The distribution of the marks is shown in Chart 3 below. For the final examination the pass rate was 75%. This compares favourably with 76% in the 2004/05 academic year when the course was delivered in the synchronous mode.
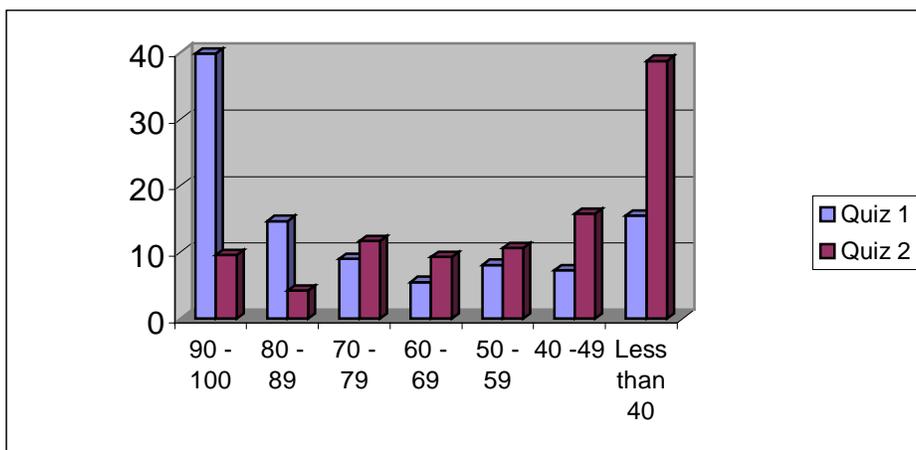
Figure 3. Performance of students in graded quizzes.

Creating a More Inclusive, Empowering Environment

In the context of pursuing a more inclusive empowering environment for the course, the findings of the feedback survey suggest that UWIDEC should:

- enhance the students' satisfaction with the tools in the course;

- enhance the satisfaction of students and tutors with aspects of the online learning experience;

- build confidence in students and tutors in performing tasks during the course; and

- get the students involved in informal interaction within their e-groups.

In pursuing these enhancements, UWIDEC should not lose sight of the fact that:

1. Students (and staff) engaged in online learning and teaching environments are required to master a complex range of skills to achieve their learning goals.

2. In addition, effective distance education can be best measured in terms of the achievement of learning, the attitudes of students and teachers, and by return on investment (Moore & Thompson, 1997 as quoted in Ramage, 2002, p. 4).

The literature provides some insights to achieving these enhancements.

Jonassen, Davidson, Collins, Campbell, and Bannan Haag (1995) suggest that a cognitive-based, constructivist approach to design can optimize the learning environment. This view regards learning as the active engagement of learners in the construction of their own knowledge and understanding of facts, processes, and concepts. According to Jonassen, Peck, and Wilson (1999), constructivist learning theory supports the belief that learners should be engaged in "active, constructive, intentional, authentic and cooperative learning" (p. 214).

For Jonassen et al. (1995), constructivist instruction is not the process of carefully arranged prescription strategies, but of "coming to understand how people make meaning, and then to

create learning environments that promote this construction" (p. 13).

Miller and Miller (1999) argue that the importance of social negotiation in the learning process makes communication critical. In their view, collaboration occurs when learners communicate their understanding, listen to the view of others, explore alternative perspectives, are challenged in their beliefs, and challenge others. This form of communication requires reflection and introspection for learners to make sense of their experiences.

Sener (2004) proposes that we move towards developing teaching pedagogies that make best use of the current technologies.

Internet technology enables the development of a "community of learners" (Jonassen et al., 1995). Focus must be given to examining how we might best utilize the unique capabilities afforded us by Internet technology—asynchronous learning, interactive simulations, direct lines to resources, individualized coursework—to improve learning outcomes (Twigg, 2001).

Computer conferencing must be recognized as not just another technology; its capacity to rehumanize distance education represents a qualitative shift, which has the potential to reshape learning at a distance (Taylor, 2001).

Computer mediated communication (CMC) provides a rich source of thoughtful interactions, which can be structured, tagged, and stored in databases, and subsequently exploited for tuition purposes on a recurring basis through the application of automated response systems. This makes the effective use of CMC fundamental to online pedagogy in terms of ensuring effective interactivity (Taylor, 2001, p. 5).

It would also be appropriate to look to fifth generation distance education models, incorporating the use of automated response systems and intelligent object databases in the context of Internet-based delivery, since these have the potential to provide students with a valuable, personalized pedagogical experience at noticeably lower cost than traditional approaches to distance education.

Choices made regarding the technology selection must be considered to be as important as the instructional methods (Kozma, 1994, as cited in Ramage, 2002, p. 4).

According to Gibbs (1992, pp. 10–11), the course characteristics necessary for fostering the desired learning include motivational context, learner activity, interaction with others, and a well-structured knowledge base.

One way to achieve motivational context is to present students with problems and let them learn what they need in order to solve them. The actual problem to be solved in this situation becomes less important to the learning that occurs through the process of solving the problem. Learner activity must be planned, reflected on, processed, and related to abstract concepts. Small groups in class and outside of class are important ways to engage students with each other. Coursework marks must be allocated to participation in student-tutor forums and other student forums in the course. New knowledge must be built on existing concepts and experience, and taught in integrated wholes rather than in bits and pieces. Students must be given the time needed to reflect on new knowledge so that they can integrate it with their existing understanding and connect to what they already know.

Improving students' problem-solving skills is critical to the fostering of the desired learning. Rogers (2000) suggests that students be provided with some of what they expect, that is, a high degree of structure and clear instructions, but they need to be challenged to consider different viewpoints and think for themselves.

Active learning and student interaction are seen as important components of Kolb's experiential learning model (1984). This suggests that every effort must be made to ensure that each phase in Kolb's experiential model is included in learning experience provided in the course.

With respect to the lack of preparation, students must be taught the skills they need—not necessarily in remedial courses, but rather within the course and through an approach that promotes a deep, process-oriented approach to learning rather than rote-memorization (Rogers, 2000).

With respect to students having little time to study, faculty members need to help students choose different priorities by making it hard for them to ignore the demands of the course (Rogers, 2000).

Other interventions that are worthy of consideration based on the experience of the Course Coordinator and the blended learning project team during the 2006/2007 delivery of the course are:

1. Recruit and train e-tutors ahead of the start of the semester. e-Tutors must be perceived to be knowledgeable in the technology from the first posting of their students.

2. Make the completion of the pre-course module mandatory.

3. Use CAMTASIA to bring some audio-video elements to the course.

4. Upload solutions to past examination papers.

5. Define service standards for responses by e-tutors to student postings.

6. Introduce graded quizzes from Unit 1 to ensure early online participation.

7. Amend coursework/final exam split from 20/80 to 35/65. Allocate coursework marks to online interaction with e-tutors and other students in an e-group.

Conclusion

In the global environment, blended learning and eLearning are "buzz-words" representing, in most cases, a movement away from traditional forms of teaching and learning and the adoption of the latest technologies. Experiences with the online delivery of the course *Mathematics for Social Sciences* emphasize, however, that online learning possesses the potential to enhance the teaching/learning experience or to make it all the more challenging. In order to overcome the potential challenges and make the experience worthwhile, it is necessary to adopt a cognitive-based, constructivist approach. The learners must be actively engaged through constant communication and activities. Online tutors must be well-prepared and able to motivate and encourage students to participate. Optimal use must be made of the technology by choosing the best tools for the job regardless of how high-tech or low-tech they may be, and students must be given the time to reflect on new knowledge and to integrate this with existing understanding.

In the final analysis, one cannot say that there was any significant difference with regard to the examination results of those students who

completed the course *Mathematics for Social Sciences* online versus those completing the course face-to-face. From the perspective of the course developers and the students, however, the online course required greater engagement with the knowledge base and the need to be clearer and more precise in general communication. Overall, the experience has led to greater attention to detail in course planning, and the identification of administrative and pedagogical issues that need to be addressed in order to ensure the delivery of a better quality course in the future. Online learning, while it forces us to be more student-centred, also requires us to focus more on the age-old skill of teaching, as we increasingly recognize that the technology merely provides the tools.

References

Bellot, E, McClenan, V., & Shears, A. (1998). *The distance student handbook 1998-1999*. Bridgetown, Barbados: UWIDEC.

Blended learning. (2005). In *Wikipedia, The free encyclopedia*. Retrieved 24 February 2005, from http://en.wikipedia.org/wiki/Blended_learning

Conger, S. B. (2005, July). If there is no significant difference, why should we care? *The Journal of Educators Online, 2*(2). Retrieved March 5, 2007, from http://www.thejeo.com/Basu%20Conger%20 Final.pdf

Gibbs, G. (1992). *Improving the quality of student learning*. Bristol, UK: Technical and Education Services.

Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Bannan Haag, B. (1995). Constructivism and computer-mediated communication in distance education. *American Journal of Distance Education, 9*(2), 7–26.

Jonassen, D. H, Peck, K. L., & Wilson, B. G. (1999). *Learning with technology: A constructivist perspective*. Upper Saddle River, NJ: Merill/Prentice Hall.

Keegan, D. (1996). *Foundations of distance education*. London: Routledge.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Lyman, P. (1999). *The social functions of digital libraries: Designing information resources for virtual communities*. Retreived March 5, 2007, from http://www.csu.edu.au/special/online99/proceedings9 9/300b.htm

Marshall, S. (2004, October). *Blended learning/ asynchronous delivery: A UWIDEC project for 2004/2005*. Paper prepared for the meeting of the Academic Programmes Committee, UWIDEC, Cave Hill, Barbados.

Oblinger, D. G., & Hawkins, B. L. (2006). The myth about no significant difference. *EDUCAUSE Review, 41*(6), 14–15.

O'Neill, K., Singh, G., & O'Donoghue, J. (2004). Implementing eLearning programmes for higher education: A review of the literature. *Journal of Information Technology Education, 3*. Retrieved from http://jite.org/documents/Vol3/v3p313-323-131.pdf

Parer, M. (Ed.). (1993). *Developing open courses*. Victoria, Australia: Centre for Distance Learning, Monash University.

Peters, O. (2000). The transformation of the university into an institution of independent learning. In T. Evans & D. Nation (Eds.), *Changing university teaching: Reflections on creating educational technologies* (pp. 10–23). London: Kogan Page.

Ramage, T. (2002). *The "no significant difference" phenomenon: A literature review*. Retrieved May 27, 2005, from http://www.usq.edu.au/electpub/e-jist/docs/html2002/ramage.html

Roberts, T. S., Jones, D., & Romm, C. T. (2000). Four models of on-line teaching. In *Proceedings of TEND 2000, Abu Dhabi, UAE*. Retrieved March 24, 2007, from http://cq-pan.cqu.edu.au/david-jones/ Publications/Papers_and_Books/TEND-2000/

Rogers, P. (September 2000). *Using theories about student learning to improve teaching*. Presented at Re-thinking Teaching in the Mathematical Sciences Workshop, UWI, St. Augustine, September 2000.

Sener, J. (2004, December 2004/January 2005). Escaping the comparison trap: Evaluating onine learning on its own terms. *Innovate, 1*(2). Retrieved March 5, 2007, from http://innovateonline.info/ index.php?view=article&id=11

Taylor, J. C. (2001, June). *Fifth generation distance education* (Higher Education Series Report No. 40). Retrieved March 5, 2007, from http://www.usq.edu.au/users/taylorj/publications.htm

Taylor, J. C., Postle, G., Reushle, S., & McDonald, J. (2000). A research agenda for online education.' *Indian Journal of Open Learning, 9*(1), 99–104.

Twigg, C. A. (2001). *Innovations in online learning: Moving beyond no significant difference* (The Pew Symposia in Learning and Technology 2001). Troy, NY: Center for Academic Transfrmation, Rensselaer Polytechnic Institute.

Sense of Place and the Teaching/Learning of Lower Secondary Science

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Abstract. This paper explores sense of place as it relates to the learning of science by Form 1 students in a rural, new-sector school in Trinidad. Lim and Calabrese Barton (2006) cite Cobb's (1977) definition of sense of place as an ecological relationship between a person and a place, where place includes physical, biological, social, cultural, and political factors. An ethnographic approach was used to observe several science teaching/learning episodes in this school over a period of one year. The predominantly qualitative data generated were analysed to determine how students and teachers leveraged their sense of place during these episodes and to investigate the consequences of this for the learning of school science.

Introduction

The pre-programmed electric bell rings, signalling the end of one class period and the beginning of another. The noise level rises slightly as some students begin to move from one classroom to another. Both boys and girls are dressed in white shirts and the purple colour of the girls' skirts is the same as that of the boys' pants. Everyone is relatively neatly dressed.

Soon, some students begin to line up in front of the science laboratory. It is time for a Form 1 science class. The laboratory assistant ensures that students are properly lined up and then gives them permission to enter the laboratory. Students move swiftly to their seats. Some seem to have favourite spots in the laboratory. Some (mostly boys) head for the back row, even though there are empty seats towards the front. Most of the seats in the front row are occupied by girls, but there are a few boys there. The students chatter animatedly as they wait for the class to start.

The teacher enters the room swiftly. He has come from another class. He reprimands some students who are misbehaving and tries to get the attention of the entire class to begin the lesson. But first, he must deal with further misdemeanours on the part of some students. Students seem bent on continuing to chat. What, one wonders, do students expect to get out of being in this place and what are they bringing to the table? And the teacher…how does he see his role in this place, in

this science laboratory, in this school, in this community?

The Issue of "Place": Some Theoretical Perspectives

The expansion of access to secondary education in some Caribbean territories in recent times has been accompanied by school building programmes to provide more physical space within which teachers and students could operate. The rural school described in the vignette above is an example of one such expansion thrust in Trinidad and Tobago. Concurrent with the expansion of physical space has been an increase in the number of teachers, as well as curriculum activity to produce new curricula in the attempt to meet the needs of an enhanced secondary school population that covers a wider ability range. New physical spaces have thus been created within which many interactions take place, involving actors from varying backgrounds.

Drawing on cultural historical activity theory, Calabrese Barton, Drake, Perez, St. Louis, and George (2004) contend that the work of schools happens in different spaces and they conceptualize spaces as being similar to Bourdieu's (1977) construct of fields: "Spaces, like fields, are constituted by underlying structures and resources, have weak boundaries, and are sites of contestation within which culture is produced and actors utilize a particular organization of

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resources" (p. 5). They contend further that spaces are dynamic as they are defined by the individuals who come together for a particular reason and the roles these individuals play. Spaces are shaped by the *rules and expectations* for participants, the *tools* involved in the participation, and the *artifacts* produced in the encounter. These spaces are connected to the teaching/learning of academic subjects in the school, the social and organizational aspects of schooling, and those aspects of the home and community that are connected with schooling.

Physical spaces become "places" when they are given meaning by human experiences within them (Semken, 2005). The study of place has been an important theme in fields such as anthropology, environmental history, environmental psychology, geosciences, human geography, urban studies, and so on. Davenport and Anderson (2005, p. 627), working in the area of natural resource management, have looked at the meanings ascribed to the concept of place by three distinct groups—geographers, sociologists, and psychologists. Geographers, they argue, commonly use a phenomenological approach in exploring how personal experiences and activities transform spaces into places. Sociologists draw on social constructionist thought in investigating how shared meanings are created when shared values and symbols are applied to a landscape. Psychologists, utilizing a cognitive approach, focus on how individuals' attitudes and behaviours towards the environment are shaped as they process information about their environment.

Individuals operating in spaces are thought to have a "sense of place." Although this concept is used extensively in the literature on the interaction between human beings and the physical environment, Convery and Dutson (2006, p. 5) point out that it is an "elusive concept." Nonetheless, they contend that the social-psychology of attachment to locality is a powerful phenomenon, even though it is complex.

In her seminal work, *Space, place and gender*, the geographer Doreen Massey (1994) pays particular attention to the relationship between the local and the global in the consideration of senses of place. Speaking as a geographer, Massey challenges the conception that places have "a seamless coherent identity" which is shared by everyone, and that a sense of place must necessarily be constructed primarily by inward-looking introspection and delving into the past. She points out that while people do have a need for some sort of attachment to a place, the global/local interface has become quite complex and dynamic, meaning different things to different groups depending on their positions of power. Furthermore, Massey outlines that "networks of social relations and understandings" characterize a place, and that each place embodies a mixture of wider and more local social relations. Consequently, she advocates that sense of place can only be constructed by linking that place to places beyond. If we map these ideas onto an educational setting such as a school, it becomes clear that one would need to consider what (if any) global factors are impacting on the interactions in the local setting being considered.

Place-Based Education

The concept of place has been receiving much attention in the field of education, resulting in several initiatives in what is now referred to as "place-based education" (Aikenhead, Calabrese Barton, & Chinn, 2006; Jennings, Swidler, & Koliba, 2005; Powers, 2004; Woodhouse & Knapp, 2000). The meanings attached to the concepts of place and sense of place in these efforts are varied. Many of the efforts take "place" to refer to the community from which students come, and these efforts involve making links between students' learning in school and their communities, much after the fashion of Dewey's call for a link between the student's experiences in school and out of school.

Five thematic patterns have been identified in place-based learning efforts:

1. Cultural studies, where lessons are based on cultural practices and other information from the community.

2. Nature studies, which involve investigations of local natural phenomena.

3. Real-world problem solving, in which students identify issues in the school or community that they would like to investigate.

4. Internship and entrepreneurial opportunities that expose young people to work situations within their own communities.

5. Induction of students into the decision-making process in their communities.

Although the form of place-based education may vary, the intention is typically to remove barriers between the school and the community and to engage students actively in the process of learning (Smith, 2002). The work done in science education in the Caribbean by George (1992, 1995, 1999); George and Glasgow (1988, 2002); and Herbert (1999, 2004, 2006), linking students' traditional practices and beliefs to the learning of school science, may be classified as cultural studies using Smith's (2002) classification. These studies all point to the fact that the traditional practices and beliefs which govern some aspects of Caribbean students' daily lives are sometimes not congruent with science as taught in schools. Teachers should first be aware of such differences and then make provision for discussing them in their science classes. Additionally, those aspects of the traditional practices and beliefs that are congruent with school science should be utilized in the instructional process.

Lim and Calabrese Barton (2006), also working in the area of science education, have outlined a somewhat more complex framework for place-based education. In describing sense of place as an ecological relationship between a person and a place, they argue that "place" includes physical, biological, social, cultural, and political factors, along with history and the psychological state of the person. In other words, they suggest, the identity of a place is composed of the physical setting, human activities, and meanings generated as a result of human processes (p. 102). An understanding of students' sense of place in the classroom emerges from a consideration of how students construct meaning out of their place experiences, that is, how they appropriate their lifeworlds (consisting of social, geopolitical, historical, and ecological contexts) in order to build an ecological relationship with the place. Lim and Calabrese Barton posit a dialectical relationship between a person and a place: "When a place interacts with a person, the place develops its own unique and living meaning and the person develops a unique and living sense of place" (p. 112). This assertion of the uniqueness of sense of place for each individual is endorsed by Massey (1994) as described above. Like other researchers (for example, Gruenewald, 2003; Seiler, 2001), Lim and Calabrese Barton argue that the current trend in standardization and globalization in education ignores the importance of students' sense of place. While this may be so, we are reminded of Massey's view that the global may have some impact on the forging of a sense of place.

These ideas influenced the framework within which place and sense of place were investigated in the science laboratory of the school described above. Specifically, the research sought to explore how students and teacher in this science class used the characteristics of the physical setting, the activities occurring therein, and meanings generated in their own experiences in establishing an ecological relationship with the place—the science classroom.

The Research Context

The school introduced in the vignette above (which we shall refer to as "Greenery High") served as the research site for the study reported in this paper. It is a new secondary school, which is situated in a rural setting in Trinidad and Tobago. The school was built by the Government with loan money under an agreement with the Inter-American Development Bank (IDB) as part of the Government's education reform thrust—the Secondary Education Modernization Programme (SEMP). Greenery High provides five years of secondary schooling for roughly 600 students from neighbouring villages and suburban areas.

Physical Plant

The facilities at Greenery High are better than in many of the older established schools in the country. The physical plant consists of a number of single-storeyed buildings along the edges of a quadrangle. The buildings house administrative offices, a staff-room, a cafeteria, classrooms, science laboratories, a multi-purpose hall, and a library. Meetings between researchers and teachers, which were held during non-teaching time in the school day, had to be conducted in the

library as there was no other available space. This arrangement caused some disruption in the operations of the library.

More specific to this study, the immediate physical space considered is one of the science laboratories in which the Form 1 class referred to above is taught (Form 1 is the first year of the secondary school and these students are typically in the age range 11–13 years). This laboratory is well equipped. In addition to the normal range of chemicals and basic scientific equipment (for example, compound microscopes) that one would expect to find in a laboratory used to teach science to Form 1 students, this laboratory is also equipped with a multimedia projector and a digital microscope as teaching aids.

The laboratory can accommodate about 35 students. It is furnished with long benches and stools as is typical in the design of many school laboratories. There are posters depicting various bits of scientific information on the walls. A storeroom is adjacent to the teaching area.

Staff

The staff at Greenery High consists of a mixture of university graduates, with and without professional preparation, in addition to non-graduates who have pursued diploma and other programmes at the tertiary level. The science teacher of the Form 1 class under study (pseudonym – Mr. F) is a university graduate with a bachelor's degree in chemistry. At Greenery High, Mr. F has been teaching science to the lower forms and chemistry to the fourth and fifth form classes since 2003. Prior to becoming a science teacher, he worked for about nine years in a chemistry laboratory. Even during his tenure as a university student, he spent much time in the laboratory working with equipment and experimenting beyond what was required for his formal studies.

Mr. F has had no formal professional preparation as a science teacher although he has attended several workshops conducted by the Ministry of Education and the School of Education at the Trinidad and Tobago campus of the regional University of the West Indies (UWI). In reflecting on his own days as a science student, he laments the fact that there was seldom any connection made between the practical activities that were done and the theory taught. Furthermore, in his view, the science was not taught in any type of context. He claims: "*They [the teachers] were the ones who were supposed to tell me how to apply it [science] to my daily life.*" He adds that his determination to teach relevant science is shaped by his conviction that his students would not have to endure being taught disconnected science as he was taught.

The laboratory assistant who works with Mr. F also has a keen interest in practical activity. He and Mr. F collaborate frequently to design practical activities for students. Sometimes, long periods are spent trying to get the right material/equipment for the science class. For example, when the class was to study about the particulate nature of matter, Mr. F and the laboratory assistant spent many hours trying to construct a smoke cell that works. In addition to their interest in practical work, these men also have an interest in audio-visual material. With the aid of a camcorder, they have designed several video clips as teaching aids, mainly for the higher forms, but with a few designed for Form 1.

The laboratory assistant also exercises some ownership over the laboratory space. When students come to the laboratory for a class, they must first line up at the door as the school rules dictate. Often, it is the laboratory assistant who ensures that the students have lined up in an orderly fashion before allowing them to enter the laboratory.

Students

The students in the school come from a variety of backgrounds. Many of them come from neighbouring rural villages where the planting of crops and the rearing of animals are the main activities pursued for a living. Some of the students are engaged in these activities with their parents; some even have animals under their care. Other students come from lower-income government housing developments in nearby towns. These students live in the "concrete jungle" and may have had little exposure to life in the countryside. What all of these students have in common is the fact that they were not ranked as top-performing students based on the results of the national Secondary Education Assessment (SEA), which is the examination used to sort students into

the various types of secondary schools in the country. Top-performing students usually gain places in the older, more established secondary schools.

These students are supposed to have studied science throughout their primary school life as science is on the primary school curriculum. However, because science is not tested in the SEA, some primary schools do not put much emphasis on it in the curriculum. Some of the students involved in this study reported that they had not had science classes during the last two years of their primary school career.

The Ministry of Education, in an attempt to expose students from Greenery High (and from similar schools) to a curriculum that best meets their needs, engaged in a curriculum development exercise as part of the SEMP. Draft SEMP curriculum materials were produced in eight subjects, one of which is science. The SEMP science curriculum development exercise was headed by a Canadian consultant and was coordinated by the Curriculum Development Division of the Ministry of Education. Several classroom teachers were engaged in writing the materials. A few schools were designated as pilot schools for the curriculum materials produced, and after a trial period the curriculum was distributed to all schools.

Research Goals

The context described above was the site that three UWI science education researchers (the authors of this paper) entered, with a view to collaborating with the science teachers in reforming the science curriculum in that context. The researchers are of the view that the manner in which a national curriculum is implemented is impacted by the characteristics of the students, teachers, and place where the implementation takes place. Consequently, one area of focus of the project was to work with the teachers to understand the interactions taking place in the science class and, through reflection, to work towards modifying the instruction to suit the context.

It should be noted that the project was conceived entirely by the university researchers. The onus was therefore on us to explain to the science staff what our mission was, and to seek their assistance in working with us to interrogate

the implementation of the SEMP curriculum in their classes in a detailed manner. In this paper, we report on the classroom encounters and interactions in Mr. F's Form 1 class over the period of one year.

Procedure

Initially, all three researchers met with teachers of the science department of Greenery High to explain their interest in working with them. The practice of university researchers working alongside teachers in the school system is practically unknown in Trinidad and Tobago. Consequently, much time was spent in the initial and subsequent meetings teasing out the idea of collaboration with these teachers. As the year progressed, the researchers became attached to individual teachers. The study reported here relates primarily to a Form 1 class taught by Mr. F. Most of the classes were observed by one researcher (George) but the other two researchers observed some of Mr. F's classes as well.

Typically, the researchers would sit at the back of the class and record field notes as the class progressed. Although one researcher (George) had suggested to Mr. F that she could sometimes function as a participant observer, this offer was never taken up. However, the researchers had many rich interactions with Mr. F in which lessons taught and plans for future lessons were discussed. Sometimes, these discussions were held after the class, sometimes over the telephone, and in a few instances they were held in the university setting. These interactions were sometimes audio-taped, while at other times detailed field notes were taken.

Data were also obtained through a questionnaire administered to students in which their ideas about science and science classes were solicited. Focus group interviews were also held with students periodically. All of the qualitative data generated comprised the database that was analysed for themes and patterns in the exploration of the relationship to place of the teacher and students.

The Encounter Between Teacher and Students in the Science Laboratory

The analysis utilizes the framework embodying the concepts identified as shapers of space that participants occupy—rules and expectations of participants, tools used, and artifacts produced (Calabrese Barton et al., 2004).

Decorum in the Science Laboratory

There were some general school expectations that filtered down to the class under observation. The most striking of these was that students are expected to enter the classroom in an orderly fashion. Thus, it was customary for the students to line up in front of the laboratory at the start of a session and not enter it until instructed to do so by the laboratory assistant or Mr. F. Often, it was the laboratory assistant who enforced this disciplinary measure while Mr. F was making his way to the laboratory from another class.

Interestingly, while students nearly always met this requirement for order outside of the classroom, they did not always observe this requirement within the science laboratory. There were several occasions when Mr. F had to deal with disciplinary matters within the science laboratory. It was clear that Mr. F expected students to be orderly in class but his expectations were often not met. Students tended to chat when they felt like, call out to a friend across the class if they had something to say, and so on. A lot of Mr. F's time was spent in trying to create the learning environment that he thought was necessary. On the other hand, students did not have the same expectations for behaviour in the science laboratory. They behaved in a way that suggested that they did not think that their presence in that physical space required any special type of behaviour.

Another school measure that seemed to have an impact on expectations and behaviour was the use of the school bell. Students always responded promptly to the ringing of the school bell by packing up their books and preparing to leave the laboratory, regardless of the nature of the classroom transaction at that point in time. It was as though the bell signalled the end of the contract with that particular teacher.

Being Engaged With Science

When asked what they thought science involved, the Form 1 students gave answers such as "solids, liquids, gases;" "parts of the human body;" "plant cells;" "the study of the world and how things work;" "matter;" and "atoms." Some of them said that science involves doing experiments while others said that they wanted to do experiments in their science class. Others expressed the desire to learn about "body parts" in science classes, while yet others were interested in learning about insects, beetles, bugs, and animals generally. Students also recounted their deep interest in television shows that deal with animals (such as are aired on the *Discovery Channel*), and in shows that highlight the use of science in solving crimes.

When prompted, the students could identify the use of science in their daily lives through activities such as "using the heater…when you plug in the heater;" "the microwave;" "when you heat water—you see water vapour going up;" and "the blue fire in the stove…how the blue fire takes in more oxygen and the red fire doesn't really take in…" Some of the boys indicated that they help to take care of animals at home. Some of them keep animals as pets; others rear animals (particularly rabbits) for sale. One of the boys gave a detailed account of how one knows when a rabbit is pregnant and what one should do to ensure that the pregnant rabbit and the baby rabbits born are well taken care of.

When probed about their parents' use of "things they made" in their day-to-day activities, these students were also able to describe activities that involved the use of indigenous technological knowledge. The following account by a female student illustrates this:

Student: My stepmother make a fireside with clay. We get the clay first and soak it in a bucket with water because it was real hard so we had to put it in a bucket of water. And for a month or so because it was totally hard like rock. And then you know how long time it had the big type of tawah? She take that nah, to form the shape. And then she put some on top here...and then you have to have a little hump here so the pot will stay good....and that is for the air to go in.

Researcher: Why do you need air in the fireside?

Student: Because the fire will light. The fire need air to light.

Researcher: What is it in the air that causes the fire to light?

Student: Oxygen... If we didn't have that hump thing it wouldn't be a fireside because no air could go in.

Students also described the construction of home-made implements such as fruit pickers, and they agreed that these implements were necessary "so that they (parents) wouldn't have plenty work to do."

Interestingly, seldom did these students make overt links between their everyday experiences in their home environments as described above and science and technology in the school setting without being prompted. In other words, their everyday experiences did not function automatically as tools that would help them to navigate their science laboratory encounters.

There were, however, one or two occasions when the link was made. For example, in one class, the teacher was using the analogy of different sizes and designs of clay blocks (bricks) serving different functions in construction to explain that different animal cells (having the same constituent parts) serve different functions.

Mr. F explained that the longer clay blocks, which have 10 holes, are used in the foundation of buildings. One student challenged this statement: "*Sir, they don't put those kinds of blocks in the foundation. Why don't you use concrete (blocks) instead of clay? ... They take a longer time to crack.*" This student later revealed to one of us that his father does small construction jobs and he moves around with his father to these jobs at times.

This disjuncture between home experiences and school science was discussed with Mr. F periodically, but he felt (as did the researchers) that the abstract nature of some parts of the Form 1 syllabus, dealing with concepts such as cells and tissues, made it very difficult to achieve this crossover. Much later in the school year, though, when dealing with food chains, there was a very lively lesson in which Mr. F was able to draw extensively on the students' everyday experiences.

Mr. F had approached the topic of food chains from an energy perspective and eventually asked the class to suggest, from their experiences, examples of food chains. Practically the entire class became involved, with students jostling to give their suggestions. Examples of food chains produced by the students were as follows:

Leaves ⟶ Insects (Grasshoppers) ⟶ Chickens ⟶ Dogs

Dead leaves in dirt ⟶ Worms ⟶ Baby chickens ⟶ Rats ⟶ Owls

Fruits ⟶ Deer ⟶ Snakes (Macaquel)

Mr. F indicated that this was a learning experience for him as he was not aware of some of the eating habits mentioned by the students. He followed up this lesson with another in which he related everything back to energy from the sun. Again, there was great interest. When the bell rang to signal the end of this class, some students stayed back to copy the diagrams on the blackboard. Others stopped by the teacher's desk on their way out to show him their books with the information copied into it. This was certainly a deviation from the norm and illustrated some degree of ownership by the students of the artifacts in this teaching/learning encounter.

The intimate connection that many of these students have with animals in their natural habitat, and their ability to use these experiences as tools in the science class were also quite evident in this lesson. Unfortunately, the structure of much of the official syllabus did not easily facilitate this type of contribution by students.

Strategies for Teaching Science

It is hoped that when students are engaged with science in the formal laboratory setting, learning of science would occur. This transition, however, did not always readily occur. Mr. F identified the absence of what he regarded as some necessary tools for learning science as being responsible for the lack of learning at times.

As a science student himself, Mr. F was intrinsically motivated to study science and to explore scientific concepts and principles in the laboratory. His interest in science (and particularly the practical aspects of it) was buttressed by the fact that his laboratory assistant was similarly disposed. Together, they formed an excellent working team. The students, however, brought somewhat different experiences to the science class. They had come from primary schools where the teaching and learning of science was not a priority area since science is not tested in the national examinations at the end of the primary school. They certainly had not had any experience with a science laboratory fitted with various pieces of scientific equipment, a multimedia projector, and a digital microscope.

This difference in the level of enthusiasm for school science puzzled Mr F. "*I cannot understand why they can't have a drive for themselves,*" he lamented. He engaged in several strategies to try to correct this situation. One strategy was to try to develop interest and facilitate learning through the use of analogies. The example of the blocks as described above was just one instance of this. Another example involved the use of the gel formed when water is added to the filling of disposable baby diapers to represent a plant cell. The gel itself was taken to represent the cytoplasm. Objects were added to the gel to represent the components of the cell. For example, a small white ball represented the nucleus, tiny grains of peas represented starch grains, and so on. However, while the example used as the analogy would sometimes catch the students' attention for a while, the difficulties involved in making the switch from the analogy to the real thing, and the difficulties encountered when the analogy broke down sometimes posed challenges in the learning process. These types of difficulty are well documented in the literature (see, for example, Duit, 1991; Harrison & Treagust, 2000).

Another strategy was the use of practical laboratory activity as an integral part of lessons. Again, this strategy reflected Mr. F's own leanings towards practical laboratory work and this was reinforced by the competence of his laboratory assistant. At times, the practical laboratory work involved demonstrations devised by Mr. F and his laboratory assistant. Sometimes, the practical work involved the use of analogies, as in the case of the structure of the plant cell described above. In the majority of instances, however, the practical laboratory work in which the students were engaged was standard fare. Mr. F held the belief that practical work should be done "*to get the children involved.*" The strategy worked for some students, but not for all. In each class where there was practical activity, some students could be seen engaged in the activity and discussing issues with their peers while others showed no interest at all.

Students' Engagement in Practical Laboratory Work

Because of the focus given to practical activities, students were familiar with some of the standard laboratory equipment and pieces of apparatus, and interest varied with the type of apparatus/equipment used in practical sessions. Students were particularly interested in the use of the compound microscope. They had developed facility in manipulating the instrument and were always keen to peer though the lenses. In one particular lesson on cells, students were required to remove a layer of onion skin, cut it into two pieces, immerse one piece in a dye, mount the pieces separately on glass slides, and then examine the slides under the microscope to compare the onion cells in their natural and dyed states. The purpose of the lesson in this case was made very clear to the students. However, what started out as an exciting lesson soon turned into frustration for many students as they experienced difficulty in laying the onion skin flat and with trapped bubbles of water. The net result was that they were not seeing anything exciting! One researcher did help some students to correct the problems and it was an "aha" moment for many who could now view the cells and clearly identify the nucleus present within each cell. Many were seen leaving their own groups to view the slides in another group.

Generally, a challenge which Mr. F faced with the class was in making the links between the practical activity done and the concepts/ideas being taught. This was particularly so because some of the concepts on the Form 1 science syllabus were somewhat abstract in nature.

Outcomes of the Encounter

Mr. F nearly always captured the outcome of whatever the classroom encounter was by giving notes to the students. He would often summarize the main points of the lesson on the blackboard and all students would diligently copy them down. At times, when Mr. F simply wished to use the blackboard to illustrate what he was talking about, he had to instruct students not to write as students seemed to think that once something was written on the blackboard, they needed to copy it down immediately. This occurred even with students who had not been paying attention during the lesson. Students seemed to think that an outcome of their exposure to a lesson in the science laboratory was a set of notes copied into their books.

Mr. F had fixed ideas about the role of notes generated in a class. Often, when faced with a lack of response from students while reviewing work, Mr. F would make comments such as: "*Look into your notes*." "*Open your books*." He thus seemed to regard the notes as an authoritative record of what students were supposed to glean from the lesson.

As the school year progressed, there were some signs of change. A few students seemed to be taking pride in the notes they were writing in their books as they made a special point of showing their books to Mr. F. as they were leaving the laboratory at the end of a lesson. However, there were still those who ceased all activity as soon as the school bell rang.

At the end of the school year, Mr. F was still concerned about the lack of motivation to learn on the part of some students. He was careful to structure revision sessions for the class as he was of the view that students would not revise the work on their own. In spite of these efforts, there was poor test performance by some students. Mr. F remained committed to a practical approach to the teaching of science and the use of analogies, even though the outcomes were not always what he had hoped for.

Discussion

The study of this Form 1 science class clearly shows that the teacher had different expectations about what should happen in a science class from most of the students. Mr. F's *modus operandi* was heavily influenced by his own experiences as a student of science. Furthermore, the space within which the science classes occurred was a space within which Mr. F felt very comfortable. In addition, the very able laboratory assistant helped to make working in the laboratory even more comfortable for Mr. F.

The students, on the other hand, had a different experience of this space. There did not seem to be much that was happening in there that made it appealing to them. Their decorum in the laboratory suggested that, by and large, they did not expect anything different to happen there than happened outside in the playing field, or in the school corridors. The very formal posture that they were made to adopt before entering the laboratory very quickly disappeared once they were seated in the room. For them, there was no special aura here so they defined the space to suit themselves, and that usually involved chatter which tended to be disruptive at times. However, their insistence on writing down the notes that Mr. F generated shows that there was some teacher/school influence on how they functioned in the space.

Occasionally, there were some sparks as in the few occasions when the science being taught allowed students to draw on the knowledge gained from their out-of-school experiences. On such occasions, there was a lot of focused talk in the classroom as nearly everyone wanted to contribute. Students even challenged the teacher when they thought that his everyday knowledge was lacking. So, one student challenged Mr. F's choice of blocks for use in the foundation of a building. This is similar to the challenging posture adopted by Jameer in Mr. Nader's class with urban middle school youth when decisions about the choice of a playground had to be made (see Lim & Calabrese Barton, 2006). Interestingly, too, there were a few new things that interested them—like the compound microscope. However, even this tool, which they had learnt to use to perform basic operations, became a source of frustration when they were required to use it in a new situation for which they were not well equipped.

Mr. F's continued use of analogies and his relentless search for new analogies to teach new concepts indicated that he considered the analogies to be valuable teaching/learning tools. Students did not seem to share this enthusiasm and

sometimes lost interest. There was an interesting incident when one boy refused to even touch the diaper that was to be used to make gel to simulate the cell. The analogy was both difficult and repulsive for this "macho" student who would not be seen touching a baby's diaper.

Some key issues arise out of the analysis of the data generated in this study. Students showed increased engagement when the learning experiences drew on their own knowledge and experiences. The ideal would be to build on this ecological relationship between the students and their experiences and the formal science curriculum to shape their sense of place in the laboratory. Since individuals' attitudes and behaviours towards the environment are shaped by how they process information about that environment, there are implications here for pedagogy and curriculum. How can science teachers at Greenery High re-form the formal science curriculum to allow them to use students' everyday knowledge and experiences as tools to navigate the laboratory encounter? What strategies should the teachers use to access the cultural background of students? Michie (n.d.), citing Jegede's (1995) work on the ecological paradigm, states that the growth and development of an individual's perception is drawn from the sociocultural environment in which the learner lives and operates. It is important, therefore, to find ways in which the laboratory space could become a place where the learning experiences have meaning for all the actors involved.

The teacher's intuitive approach to teaching by drawing on past experiences (such as the importance to him of the role of practical activities), and the use of analogies as a teaching strategy, did not result in the benefits expected. One contributing factor could be the students' readiness and/or cognitive ability to engage in analogical thinking, in the absence of direct teaching of the skills involved. Another factor could be the teacher's limited pedagogical content knowledge with respect to the use of analogies as a teaching tool, and the choice of analogy (sometimes very complicated as in the case of the model cell). There is potential here for meaning-making by students out of their place experiences if the difficulties identified could be addressed.

Tools in terms of physical, material, and human resources were available in this classroom.

However, the required artifacts (deep learning and good test scores) were not produced. This analysis suggests that a greater understanding of the students' sense of place by Mr. F might help to remedy this situation. In fact, later in the year, this had begun to happen as Mr. F. allowed the students to use their background knowledge to build concepts related to food chains.

Finally, the role and influence of the national science curriculum cannot be ignored. Much of Mr. F's energy was directed at finding ways to teach what was stated in the curriculum. As such, the curriculum was a powerful factor in shaping the space. Tensions arose because students did not find much of what was on the curriculum interesting and readily displayed their lack of interest. One wonders how the sense of place of the students would change if the sense of place of Mr. F were to change to include the students' interests some more. The investigation continues.

References

Aikenhead, G., Calabrese Barton, A., & Chinn, P. W. U. (2006). Forum: Toward a politics of place-based science education. *Cultural Studies of Science Education*, *1*(2), 403–416.

Calabrese Barton, A., Drake, C., Perez, J. G., St. Louis, K., & George, M. (2004). Ecologies of parental engagement in urban education. *Educational Researcher*, *33*(4), 3–12.

Convery, I., & Dutson, T. (2006). *Sense of place project report*. Cumbria, UK: School of Natural Resources, University of Central Lancashire.

Davenport, M. A., & Anderson, D. H. (2005). Getting from sense of place to place-based management: An interpretive investigation of place meanings and perceptions of landscape change. *Society and Natural Resources*, *18*(7), 625–641.

Duit, R. (1991). On the role of analogies and metaphors in learning science. *Science Education*, *75*(6), 649–672.

George, J. (1992). Science teachers as innovators using indigenous resources. *International Journal of Science Education*, *14*(1), 95–109.

George, J. (1995). Health education challenges in a rural context: A case study. *Studies in Science Education*, *25*, 239–262.

George, J. (1999). World view analysis of knowledge in a rural village: Implications for science education. *Science Education*, *83*(1), 77–95.

George, J., & Glasgow, J. (1988). Street science and conventional science in the West Indies. *Studies in Science Education*, 15, 109–118.

George, J., & Glasgow, J. (2002). Culturing environmental education in the Caribbean. *Canadian Journal of Environmental Education*, *7*(1), 117–131.

Gruenewald, D. (2003). The best of both worlds: A critical pedagogy of place. *Educational Researcher*, *32*(4), 3–12.

Harrison, A. G., & Treagust, D. F. (2000). A typology of school science models. *International Journal of Science Education*, *22*(9), 1011–1026.

Herbert, S. (1999). Urban students' ideas about the "heated" body: Implications for science education. *Caribbean Curriculum*, *7*(1), 1–20.

Herbert, S. (2004). Lessons from assessment: Experiences of a cross-cultural unit of work in science. *Evaluation and Research in Education*, *18*(3), 139–157.

Herbert, S. (2006). The challenges of designing and implementing a cross-cultural unit of work. *Educational Action Research*, *14*(1), 45–64.

Jennings, N., Swidler, S., & Koliba, C. (2005). Place-based education in the standards-based reform era—conflict or complement? *American Journal of Education*, *112*(1), 44–65.

Lim, M., & Calabrese Barton, A. (2006). Science learning and a sense of place in a[n] urban middle school. *Cultural Studies of Science Education*, *1*(1), 107–142.

Massey, D. (1994). A global sense of place. In D. Massey (Ed.), *Space, place and gender* (pp. 146–156). Minneapolis, MN: University of Minnesota Press.

Michie, M. (n.d.). *An affirmation of the place of indigenous knowledge in developing globalised science curriculum*. Retrieved December 4, 2005, from http://members.ozemail.com.au/~mmichie/affirmation.htm

Powers, A. L. (2004). An evaluation of four place-based education programs. *Journal of Environmental Education*, *35*(4), 17–32.

Seiler, G. (2001). Reversing the standard direction: Science emerging from the lives of African American students. *Journal of Research in Science Teaching*, *38*(9), 1000–1014.

Semken, S. (2005). Sense of place and place-based introductory geoscience teaching for American Indian and Alaska Native undergraduates. *Journal of Geoscience Education*, *53*(2), 149–157.

Smith, G. A. (2002). Place-based education: Learning to be where we are. *Phi Delta Kappan*, *83*(8), 584–594.

Woodhouse, J. L., & Knapp, C. E. (2000). *Place-based curriculum and instruction: Outdoor and environmental approaches* (ERIC Digest). Charlestown, WV: Eric Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED448012)

The L2 Learner's Performance

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Abstract. It is generally accepted that the native speaker's grammatical competence differs from his performance, as the speech act is influenced by memory limitations, distractions, and slips of the tongue. However, because this theory applies in the context of the ideal speaker-listener in a homogeneous speech community, communication is not hampered. How, therefore, can the competence of an L2 learner be measured, as he operates within an evolving system of interlanguage, that ebbs and flows to and from the target? Can it be said that the language learner "knows" a set of grammatical structures in the target language when he scores satisfactorily in a timed assessment or class activity, or is his competence characterized by what he produces on his feet, as it were, in spontaneous language production? During a 10-week semester, data were collected from 13 EFL students in the form of errors made during in-class spoken and written tasks/tests. These were measured against errors sourced from student e-mails to the teacher—a system of electronic communication requested that had no bearing on the course and was optional. It was felt that, although written, the medium was as natural as spoken language, existing as a better indicator of the language learner's competence.

Introduction

Computer Mediated Communication (CMC) features prominently in the realm of academia as a channel among administrative staff, instructors, and students, through which course issues are discussed and concerns raised (Chen, 2006). It offers a forum where participants are confined neither to office hours nor to the availability of personnel in order to make or respond to queries. CMC continues to exist in institutions of higher learning as the impetus for distance learning programmes and on-line tutorials (Zhang, Perris, & Yeung, 2005).

At varying proficiency levels in foreign language learning, CMC is also finding its place. E-mail technology, in particular, has been used as a tool to enhance language proficiency, primarily through the technique of e-journals, which are speedily replacing traditional print ones. Interactions have been found to be more student-initiated, personal, and expressive in nature, yielding copious language and conveyed through a greater range of topics and language functions, such as discourse markers and questions. In the case of beginner students, e-mail journals also contained more accurate language forms than print versions (Gonzales-Bueno, 1998).

Two specific characteristics of e-mail technology render it more suitable than chat groups for the purpose of dialogue journals, namely, that it is private and asynchronous in nature. For language learners daunted by the task of producing erroneous language within the classroom, e-mail provides a means of communication between the language instructor and the student that is safe (Gonzalez-Bueno 1998; Kern, 1995; Razak & Asmawi, 2004; Zhang et al., 2005). In chatroom discussions, on the contrary, language learners have been found to lurk on the periphery, choosing not to participate because the forum is a public one (Taylor, 2002). The asynchronous modality of e-mail communication suits dialogue journal writing, as language learners may write according to their own "pace and motivation," allowing instructors to respond with the same facility (Gonzalez-Bueno, 1998, p. 58). The benefits of oral discussion are thus reaped "without the temporal and spatial constraints imposed by the classroom" (Blake, 2000, p. 131). Chat groups, on the other hand, with synchronous interaction, pose a sharp contrast in this regard, as the time for "reflection and articulation" is limited (Zhang et al., 2005, p. 795).

The conversational format of e-mail (Crystal, 2001; Gonzalez-Bueno, 1998) also makes it an ideal choice for dialogue journals, as the teacher is a participant of "written" conversation instead of an evaluator. This type of interaction stands clear

of the "slow and clumsy" text-based interactions of print journals (Warschauer, 1997, p. 472).

Opportunities for dynamic interaction are however afforded both in brands of "Netspeak"—chat-groups and e-mail—which "display much of the urgency and energetic force that is characteristic of face-to-face communication" (Crystal, 2001, p. 29). An immediate response is expected, and the presence of icons such as "smileys" and winks are marks that distinguish these from traditional written language, which is typically devoid of intonation and facial expressions. The speed and spontaneity of e-mail are confirmed by replies requesting clarification, by misspellings, and by the tendency to use a proliferation of exclamations and not to capitalize (Crystal, 2001; Gonzalez-Bueno, 1998), all of which show a lack of reflection more comparable to oral discourse than to written language. Even "traditional" dialogue journals, that is, print ones, have been found to display the "flow" of conversation. This is seen in a study of native English-speaking students of Beginner Hebrew at a North American university, who employed L1 lexical items as "placeholders" in lieu of their Hebrew equivalents, which they did not source from the dictionary because they were engaged in conversation, as well as in the case of their instructor, who made use of "cues such as happy faces and lots of exclamation marks as mediators of meaning" (Schwarzer, 2004, p. 82).

The potential of CMC in foreign language courses as a means of exploring interactional processes, or the negotiation of meaning supported by the Interaction Hypothesis, has led to its consideration in tracking the development of interlanguage via chat groups, as in one case where language learners of Spanish communicated with native Spanish speakers (Blake, 2000). However, possibly because of the limited time in which participants had to respond, the interlanguage produced remained at the lexical level. In another such case, synchronous interaction was facilitated through the use of *Daedalus InterChange*, a computer network application. In spite of the volume of language generated, however, less grammatical accuracy, coherence, and continuity were noted when compared with oral discussions evolving out of the same topics (Kern, 1995).

E-mail communication is rapid in the sense that communication is urgent. It is, however, not as hurried as the communication of chat-groups, where urgency to maintain the rush of conversation is imposed. The former is therefore likely to be more reflective of the L2 learner's competence—of his interlanguage as it is presented in speech. Freezing human interaction is now possible because of its availability in e-mail—a text-based form (Warschauer, 1997). It is a form that can be easily stored and retrieved in order to track the competence errors of language learners, which is central in second language acquisition (SLA) (Ellis, 2003), the learners' own language system being the starting point in SLA research (Cook, 2001).

In direct opposition, samples of natural, spontaneous language, which indicate learner competence, cannot be sourced from grammar evaluations that reveal conscious grammar or that which has been learnt in the classroom, but not that which the learner has acquired (Krashen, 1982). These are constructed using elements of choice or requiring gap-filling, thereby not demonstrating whether students can in fact produce the structures in a given context. The element of "over-testing" cannot be overlooked either, as the student is asked to manipulate excessive grammatical structures, the volume of which he may never have to employ in one conversation, job interview, or presentation. Testing, as it exists, therefore measures the learner's knowledge for evaluation purposes instead of describing his competence (Ellis, 2003), although a language evaluation should reveal what the students are likely to do with the language in a target context (Tomlinson, 2005).

The English as a Foreign Language (EFL) Context at The University of the West Indies (UWI), St. Augustine

In describing the clientele who arrive to Trinidad for English Language tuition, the classifications of second versus foreign language merit attention. These help to locate the student in the language community and emphasize his immigration status, both of which have certain pedagogical implications.

For geographical reasons, it is not unusual for students from Venezuela, Colombia, and the French Caribbean to choose Trinidad as a destination point for the learning of English. But student representation from China, Iran, Russia, Germany, and Togo has also been witnessed in the university English classroom. In both cases, that is, the Latin American/Caribbean influx and the Eastern or Far Eastern trickle, the students are adults, since university requirements stipulate secondary-level education as the prerequisite for entry, and specifically, age 18 if the port of entry is the Faculty of Medical Sciences. On most occasions, students arrive with the mindset of persons purchasing a commodity, since their job sites and universities require them to return to their homeland with some level of English language proficiency. A Haitian seeking political asylum in Trinidad, and given refugee status by the Department of Immigration, attended English classes at UWI for three semesters with the hope of participating in future Haitian politics. Expatriate professionals and diplomats and their spouses, however, do frequent the English language classroom when they wish to move out of the comfort zone that allows interaction either in their native language or in minimal English.

Since the students are not immigrants, and therefore will not eventually become citizens, there is no state policy in Trinidad regarding how English is taught to them. In the immigrant situation, the how and what of the curriculum is governed by state policy, as in the United States (US), for minority-language children, where one such policy used to be the "sink or swim" method that had advocated an English-only classroom (Cook, 1991). In 1968, the US Congress passed the Bilingual Act, which set in motion a system of teaching that used the native language of the immigrant student as a tool to foster learning. This was endorsed by Congress in the Equal Opportunity Act of 1974 (Kohlhepp, 1999).

Curriculum content for immigrants is also regulated by the State: "A key component in the curriculum is often 'citizenship' ensuring that learners are aware of their rights and obligations as permanent-residents in English-speaking countries" (Graddol, 2006, p. 86). Currently, green card holders who have intentions of becoming naturalized US citizens need to prepare for a more difficult citizenship test, including components such as The Bill of Rights: "To be eligible for naturalization, immigrants must be able to read, write and speak basic English and must also have basic knowledge of U.S. history and government" (US citizenship exam to get tougher, 2006).

The language learning reality of the immigrant versus the tourist explains why English is not deemed a second, but a foreign, language in Trinidad. In the case of the latter, the learner is an outsider, a foreigner, and the target language is someone else's mother tongue. He is a "linguistic tourist—allowed to visit, but without rights of residence and required always to respect the superior authority of the native speakers" (Graddol, 2006, p. 83).

Regarding EFL in Trinidad, therefore, method and curricula evolve in conjunction with what particular EFL schools deem fit. At UWI, the curriculum is needs-based. Students are tested and put into levels commensurate with their proficiency. Although a particular text is selected—primarily as a springboard for grammar teaching—supplementary material is copiously introduced into the classroom depending on students' needs, as in what they request and what they require for their jobs, for future studies, or leisure activities.

Other than in the classroom where the language is learned consciously, adults also develop competence in a second or foreign language through acquisition, or unconscious learning, by virtue of their being in the language environment (Krashen, 1982). In the context of the student's homeland, however, formal or classroom learning, which provides "the major source of comprehensible input" (Krashen, p. 58), is non-negotiable as the opportunity to acquire the language in the community is negligible. How useful, therefore, is the English language classroom in a country such as Trinidad where English can arguably be acquired through student interaction with the language community?

For students who are residing in the target culture for a short period, especially for adults not yet at an advanced level but who are generally expected to understand more than children do, the classroom does have its place (Krashen, 1982). At UWI, students have already had some exposure to the English language and so are not true beginners. Therefore, pre-intermediate, intermediate, and upper-intermediate levels all lie within the ambit

of customary course offerings. Students are, however, not at a sufficiently advanced level to cope with authentic interaction in the absence of classroom support.

The argument in favour of the classroom as a source of comprehensible input for the visiting, intermediate student underscores the pivotal role of the teacher, who supplies this input through what is known as "teacher talk." Foreigner talk comprises the modified language of native speakers when faced with those not fully competent in their language, and teacher talk is foreigner talk within the walls of the classroom. It is "the language of classroom management and explanation" (Krashen, 1982, p. 25). It is only logical, therefore, that the teacher in the EFL situation is professionally trained, with teacher talk existing, of course, as only one dimension of the requirements of the teacher in the foreign language classroom.

The TESOL diploma programme at the university, which requires first-year linguistics as a prerequisite and which comprises six courses, including a teaching practicum, was recently upgraded to postgraduate status. This programme prepares those with an undergraduate degree, usually a language/linguistics-based one, to teach EFL. Those qualified are routinely absorbed into the university's EFL classroom. That teachers are native English speakers happens to be the norm, although in 2006 the teacher-trainer for the TESOL diploma programme was an Iranian, whose first language was not English.

It is true that trained teachers are more inclined to build teaching materials and conduct classes according to the linguistic needs and interests of students. This can be compared with curriculum design at language institutions where a selected text is viewed as a course outline, and the end of a particular course is signalled upon its completion. An interview conducted with seven EFL students in November 2006 was expected to glean the differences that lay between EFL at UWI and at other institutions (I. C. Leal; N. C. Boutto; S. Cilpa; L. Guilarte; H. Ovalle; A. Penaranda de Froget, & Y. A. Walrond Rivero, personal communication, November 18, 2006). The reflections of Boutto and Penaranda de Froget, who had formerly attended EFL institutions in Port of Spain and San Fernando, and at the time of the interview had completed 9 of the required 10

weeks of an EFL course at UWI, revealed clearly disparate contexts regarding methodology and teacher support (see Appendix A).

Method

The EFL 10-week semester from which language samples were collected fell within the university's 13-week Semester 1, and lasted from September to November 2006. Upon pre-testing, the two levels offered were: Intermediate with five students and Upper-Intermediate with eight. Of the latter, the circumstances of three students influenced their attendance. Leave of absence from work permitted one to attend classes only from the start of Week 4 until the end of Week 7; and the other two discovered and enrolled in the EFL programme in Weeks 4 and 6, respectively; the latter opting not to participate in in-course evaluations.

As is the norm, a grammar teacher was assigned to each level and grammar/vocabulary two-hour sessions took place four mornings per week. The four 90-minute afternoon sessions were divided into Listening/Speaking and Reading/Writing, with a different teacher assigned for either option at each level.

The person in charge of collecting language samples, also the EFL Coordinator, was responsible for Upper-Intermediate grammar, Upper-Intermediate Listening/Speaking, and Intermediate Reading/Writing. The collection of samples from the course modules that lay outside the purview of the coordinator was therefore dependent upon the submissions of cooperating teachers, as in copies of Intermediate grammar test scripts for Weeks 3, 6, and 9; copies of Upper-Intermediate written samples; and oral samples of the Intermediate students. In the case of the last, however, the teacher who attempted to conduct recordings on two occasions experienced difficulty. During the Reading/Writing module with the Intermediate group, the researcher did however have the opportunity to record patterns in oral production during pre- and post-Reading/Writing activities.

Towards the end of the first week of the course, the system of e-mail dialogue journals was introduced. Students were told that this had no bearing on the course, but if they wished to participate they should write the coordinator on a weekly basis, perhaps on a weekend, regarding

their settling-in in Trinidad. One student asked whether he could write more than once a week and it was agreed that he could. At the start of Week 2, students were told that their instructor had not received any e-mails, in spite of the long weekend that had passed. Some who were staying in student dormitories complained that the computers were not working; others said that since they had not received their university identification cards they had no access to library facilities and, therefore, no computer access. It was clear from one student's expression that he had forgotten about the exercise. From Week 2, e-mails began coming in and the system of dialogue journals began.

At both levels, the grammar syllabus followed that of the prescribed texts, namely, *New Headway Intermediate Student's Book* (Soars, 2005) and *New Headway Upper-Intermediate Student's Book* (Soars, 2005) (see Appendix B).

Providing students with feedback on oral and written errors, made routinely and during evaluation exercises held in Weeks 5 and 9, was left to the discretion of cooperating teachers. Feedback is of course crucial, as leaving errors uncorrected may allow them to become permanent features of language, thus serving to limit linguistic competence (Lalande, 1981). Also, when "explicit feedback on grammar" was given on students' compositions, grammatical accuracy in writing was found to improve significantly (Gascoigne, 2004, p. 72). It is noteworthy, however, that "translation," customarily used in the second language classroom as a method of instruction by the teacher or as a communicative strategy by the student (Schwarzer, 2004), and as "a feedback move when it follows a student's unsolicited use of the L1" (Panova & Lyster, 2002, p. 582) is not employed in UWI's EFL classroom as a uniform first language does not always exist. Although in the semester in question, the Intermediate class population shared the same first language—that is, Spanish—at the Upper-Intermediate level, one student was a native speaker of French.

The teacher of the Upper-Intermediate Reading/Writing segment used "correction symbols" in students' written scripts, handing over the task of error repair to them. With the guidance of these, students reconstructed their written pieces below the first drafts. They were asked to simultaneously build a portfolio with both writing samples and their weekly comments about their own writing progress. In the Reading/Writing Intermediate module, the EFL coordinator did not use symbols as a feedback strategy, but corrected all errors, supplied appropriate target structures, and encouraged students to rewrite their compositions below. This procedure was modified by the end of Week 1 for the reasons below.

During the first Reading/Writing segment, students were asked to write a letter home, using key vocabulary that had been presented in the Reading exercise, which was two letters written on the same day—one by a young man to his parents; another by the young man's father to him (Swan & Walter, 1992). After the students' own letters had been corrected and the necessary target structures supplied, they were asked to write the corrected versions on postcards and mail these home. Two days later, on reviewing what was written on one postcard, the instructor discovered that some structures were erroneous. From Week 2, therefore, in addition to providing the target structures that compositions or letters required, the instructor's feedback included the rewriting of the correct versions below the students' first drafts, in the case of students whose scripts were covered in teacher writing and who would have had difficulty in deciphering what structures they should use.

On two occasions, students received feedback in pairs. The first opportunity of this kind took place in Week 2. The Intermediate Reading lesson, "Love and Other Problems" (Swan & Walter, 1992), was used as a springboard for the Writing task, where each student described a personal problem and passed it on to a classmate for written advice. Errors were corrected, appropriate target structures supplied, and copies were made so that students were able to see what errors they and their classmates had made in either writing about a problem or in responding to one.

The second occasion took place in Week 3, where both groups—Intermediate and Upper-Intermediate—were merged for Reading/Writing since an instructor was absent. The Intermediate Reading lesson was, "Sleepy workers costing billions" (2006). Each student was given the task of writing an e-mail as an offshoot of the Reading task, enquiring as to the necessity of attending a workshop on the problem of tired workers: "You are a team leader and you want to know whether all the members of your team have to go to the

workshop. You are working on a new advertising campaign and the completion date is August 12." Completed e-mails were then handed to someone from the other level for the purposes of correction. Teacher feedback in response to this exercise took the form of noting each student's errors and their corrections on index cards. If an error either went unnoticed by a peer-corrector, or a perfect target structure had been signalled as incorrect, there was a note to the student in question such as, "Show this to Nabija!" In a few cases, the teacher employed her knowledge of the student's L1 to supply feedback, as in the following examples from Suzelle's e-mail: "I'm writing for confirm my presence in the workshop. I'm trying to do my best for arrived as soon as possible." On her index card, the following was written: "Your use of 'for' in 'for confirm,' 'for arrive' comes from the French 'pour'."

Oral feedback provided by the EFL coordinator usually did not take place during the class itself. Instead, errors, both overt and covert, were noted; overt errors being those easily identified as "a clear deviation in form" (Ellis, 2003, p. 52), and covert errors standing as those that are "superficially well-formed but do not mean what the learner intended them to" (Ellis, p. 52). Examples of overt and covert errors made by students within the semester in question were: "I think they are very younger"; and "They are always boring," used to mean "They are always bored."

The day succeeding any speaking activity—a routine class, an oral evaluation, a task set before or after a Reading/Writing segment—each student received a typewritten list of errors made and their equivalents in the target language, under two columns: "You Said" and "I Say." Except in the teacher's record, student names were not assigned to errors, although those made by the same person were listed together and students were usually able to pinpoint which they had made. Before a Writing evaluation, a student of the Intermediate Level was seen reading this "You Said"/"I Say" handout. The static form of this feedback type clearly lent itself to more student consideration than, say, recasts, where immediately after negative feedback from the instructor, learners produce corrections that may be "quickly forgotten and do not affect their underlying language system" (Mitchell & Myles, 2004, pp. 181–182).

The latter can be compared to a feedback strategy routinely employed by the instructor, but one that did not persist. During conversation activities, the teacher would discreetly note student errors on the whiteboard, reserving the last 15 minutes of class time for correction of these. Some learners copied the target revisions that pertained either to their own production errors or those of their classmates. But learners who did not think it necessary to make notes may have quickly forgotten the corrections, reducing the likelihood that these would actually impact on their own language system.

At the end of the course, student errors derived from grammar evaluations, written samples, oral samples, and e-mails were classified into five common areas: 1) the use of the present for past and past for present, 2) subject-verb-object sequence in declaratives and questions, 3) verb patterns, 4) pronoun deletion, and 5) omitting or including the definite or indefinite article erroneously. Frequency of aspectual errors and deletion of the auxiliary verb within samples collected at the Upper-Intermediate Level formed two additional categories for this group.

Findings

For the purposes of this paper, one error type—the use of Present for Past/Past for Present—was isolated and mounted on graphs with reference to how it featured in the various arenas of performance—grammar-testing, written composi-tions/letters, oral production, and e-mails. As three students of the Upper-Intermediate Level did not attend the full course and one from each of the remaining five per class journeyed abroad during the course itself, the data highlight a sample of the performance of four students from each group. More than 80% in-class attendance by these eight students allowed errors to be tracked, not cross-sectionally but over time or longitudinally: "Focusing solely on the errors which learners produce at a single point in time—as most of the studies have done—can only provide a partial picture. It takes no account of what learners do correctly, of development over time, and of avoidance phenomena" (Ellis, 2003, p. 69).

In the following series of graphs, performance of the Intermediate students, Hernando, Nabija, Raiza, and Maria is presented before that of their Upper-Intermediate counterparts, Ivan, Suzelle, Yuri, and Jorge.
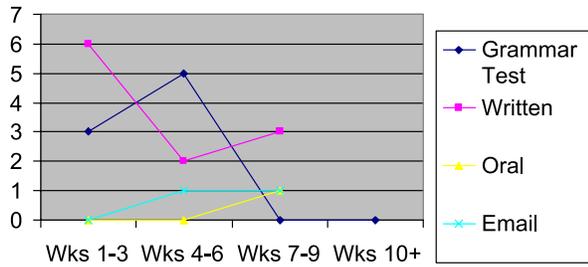
Figure 1. Present/Past: Hernando.

Figure 2. Present/Past: Nabija.

Figure 3. Present/Past: Raiza.

Figure 4. Present/Past: Maria.

Figure 5. Present/Past: Ivan.

Figure 6. Present/Past: Suzelle.

Figure 7. Present/Past: Yuri.
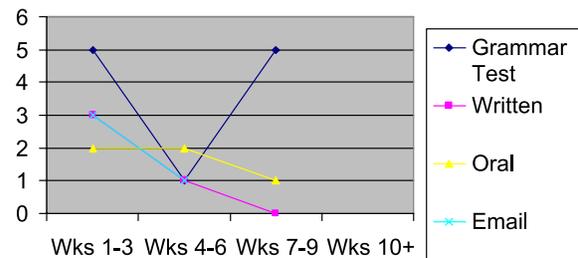
Figure 8. Present/Past: Jorge.

Discussion

A cursory glance at the graphs displayed would indicate that grammar testing does not render a global idea of errors likely to appear in the learner's interlanguage at any given time. In Weeks 7–9, for instance, the performance of the Intermediate students reflected in the prepared sample indicates that the isolated error is not part of the learner's repertoire. It is not exhibited either in the performance of the Upper-Intermediate students for the period Weeks 4–6 (with the exception of Jorge, in whose case the error appears once). But during these two periods in question, namely, Weeks 4–6 and Weeks 7–9 of the Upper-Intermediate and Intermediate course, respectively, the error surfaces in other arenas of performance: in the written production of Hernando, Ivan, and Yuri; in the oral production of Hernando, Raiza, Maria, Ivan, and Jorge; and in the e-mail writing of Hernando, Ivan, Suzelle, and Jorge. It is unclear what Nabija's written, oral, and e-mail samples would have yielded for Weeks 7–9 as she was absent in Week 7 and, therefore, did not make an oral presentation required at the end of a Reading class. No e-mails were submitted for this time period and her written evaluation piece in Week 9 was accidentally not copied.

The disparate results between learner output in grammar and other areas of language production exemplify that the nature of grammar testing limits it as a means of evaluating only certain features of the learner's competence at any given time. The Intermediate Grammar Assessments #1 and #2 explicitly tested both the present and past tense, as did the Upper-Intermediate Grammar Assessments #1 and #3. But Grammar Evaluations #2 and #3 of the Intermediate and Upper-Intermediate levels did not provide students with this opportunity.

In half of the sampling of students, however, the error levels of grammar evaluations and written samples were comparable. This was evident in the Intermediate group by the intersection of both lines—grammar and writing—at two points on Hernando's graph, once on Nabija's, and once on Raiza's. In Raiza's case, however, both lines revealed no present/past error in Weeks 7–9 but showed frequency in the case of Ivan during the same period. With the exception of Ivan's case, the mirroring of errors in writing and grammar testing could either be that students'

conscious learning of grammar in the classroom, or self-monitoring based on consistent feedback strategies, impacted upon the more reflective nature of written production, which demands fuller grammatical structures than the fragmentary ones that occur in speech.

As expected, performance in speech and e-mail production exhibited similar trends, as in the following cases and time periods: Hernando in the Weeks 7–9 period; Nabija in Weeks 1–3 and 4–6: Maria generally: and Ivan in Weeks 7–9. However, clearly disparate trends were noticed in the cases of Suzelle and Raiza, where the level of error in oral performance was higher than in e-mail production. In the cases of Hernando, Nabija, Maria, and Ivan, students could have treated the forum of e-mail like speech, and in the cases of Suzelle and Raiza the attention paid to grammaticality in writing was possibly also paid to e-mail writing.

Conclusion

The number of e-mails received per student varied considerably. In some cases, two were received, and in others, five and nine. A clear limitation of this study, therefore, was that e-mail journal writing was optional. The rationale supporting this was that students would produce writing comparable to speech, although in the case of Suzelle and Raiza, this was possibly not the case. To make e-mail journals mandatory would mean eliciting language samples, clearly a retrograde step in retrieving natural language samples for the purposes of analysing interlanguage. Although prospective EFL students e-mail their applications and queries before arriving to pursue a course, communication in their language is offered. When they do correspond in English, it is sometimes the case that someone is doing so on their behalf.

In the EFL context at UWI, two factors lend themselves to an explanation of why e-mail technology is not used by students for administrative issues. The few student numbers means that full out-of-class support is available regarding matters of housing, identification cards, confirmation of airline tickets, and immigration matters. The EFL coordinator is also the main teacher, so that student queries are addressed on a daily basis.

E-mail writing in this sample highlighted an error pattern that was not elucidated through grammar testing, but which was closer in frequency to the two arenas of language production, either speaking or writing. Dialogue journals have been regarded as a way of enhancing the writing ability of students and it gives them an opportunity to employ the target language for "written conversation" for authentic interaction (Schwarzer, 2004, p. 79). E-mail dialogue journals used as a tool for tracking the language learner's idiosyncratic language system also merit consideration. They represent a way through which teachers may determine which grammatical areas require support, and a medium through which the language learner may view where he exists in relation to the target language at any given time.

References

Blake, R. (2000). Computer mediated communication: A window on L2 Spanish interlanguage. *Language Learning & Technology, 4*(1), 120–136.

Chen, C-F. E. (2006). The development of e-mail literacy: From writing to peers to writing to authority figures. *Language Learning & Technology, 10*(2) 35–55.

Cook, V. (1991). *Second language learning and language teaching*. London: Edward Arnold.

Cook, V. (2001). *Second language learning and language teaching* (3rd ed.). New York: Oxford University Press.

Crystal, D. (2001). *Language and the Internet*. New York: Cambridge University Press.

Ellis, R. (2003). *The study of second language acquisition*. Oxford: Oxford University Press.

Gascoigne, C. (2004). Examining the effect of feedback in beginning L2 composition. *Foreign Language Annals, 37*(1), 71–76.

Gonzalez-Bueno, M. (1998). The effects of electronic mail on Spanish L2 discourse. *Language Learning & Technology, 1*(2), 155–170.

Graddol, D. (2006). *English next: Why global English may mean the end of 'English as a Foreign Language.'* Retrieved November 20, 2006, from http:www.britishcouncil.org/files/documents/learning-research-english-next.pdf

Kern, R. G. (1995). Restructuring classroom interaction with network computers: Effects on quantity and characteristics of language production. *Modern Language Journal, 79*(4), 457–476.

Kohlhepp, B. H. (1999). Bilingual education vs. English-only education. Retrieved November 29, 2006, from http://ematusov.soe.udel.edu/final.paper.pub/_pwfsfp/00000157.htm

Krashen, S. D. (1982). *Principles and practice in second language acquisition.* New York: Pergamon.

Lalande J. F., II. (1981). An error in error-correction policies? *ADFL Bulletin, 12*(3), 45–47. Retrieved January 27, 2006, from http:web2.adfl.org/adfl/bulletin/vl2n3/123045.htm

Mitchell, R., & Myles, F. (2004). *Second language learning theories* (2nd ed.). London: Oxford University Press.

Panova, I., & Lyster, R. (2002). Patterns of corrective feedback and uptake in the adult ESL classroom. *TESOL Quarterly, 36*(4), 573–595.

Razak, R. A., & Asmawi, A. (2004). The use of dialogue journal through email technology in developing writing interest and skills. *Malaysian Online Journal of Instructional Technology, 1*(2). Retrieved September 27, 2006, from http://pppjj.usm.my/mojit/articles/v1N2-final/MOJIT-Adelina.htm

Schwarzer, D. (2004). Student and teacher strategies for communicating through dialogue journals in Hebrew: A teacher research project. *Foreign Language Annals, 37*(1), 77–84.

Sleepy workers costing billions. (2006, June). Retrieved September 20, 2006, from http://en.ce.cn/World/Asia-Pacific/200606/10/t20060610_7289335.shtml

Soars, L., & Soars, J. (2005). *New Headway intermediate student's book* (3rd ed.). Oxford: Oxford University Press.

Soars, L., & Soars, J. (2005). *New Headway upper-intermediate student's book* (3rd ed.). Oxford: Oxford University Press.

Swan, M., Walter, C., & O'Sullivan, D. (1992) *The new Cambridge English course 3 teacher's book*. London: Cambridge University Press.

Taylor, J. C. (2002). *Teaching and learning online: The workers, the lurkers and the shirkers*. Paper presented at Shanghai International Open and Distance Education Symposium, Shanghai, China. Retrieved March 14 2007, from http://www.ouhk.edu.hk/CRIDAL/cridala2002/speeches/taylor.pdf

Tomlinson, B. (2005). Testing to learn: A personal view of language testing. *English Language Teaching Journal, 59*(1), 39–46.

US citizenship exam to get tougher. (2006, November). *Hardbeatnews.com: Daily Caribbean Diaspora News.* Retrieved November 28 2006, from http://www.hardbeatnews.com/editor/RTE/my_documents/my_files/arc_details.asp?newsid=11218&title=Archive

Warschauer, M. (1997) Computer-mediated collaborative learning. *Modern Language Journal, 81*(4), 470–481.

Zhang, W., Perris K., & Yeung, L. (2005). Online tutorial support in open and distance learning: Students' perceptions. *British Journal of Educational Technology, 36*(5), 789–804.

Appendix A

Interviewer: And you, Nabija?

Nabija: The principal thing is at the university all the people are serious because when I arrived to Trinidad the first time, I was studying at an institute in Port-of-Spain and that institute doesn't...don't want inscribe in the Ministry of Education. For internet, the principal of the school told me that there have areas...recreational areas...when I arrived the Institute only one football...balon...football for maybe thirty persons and all things...all things that...maybe the organization...I have four teachers like the university...like here, but the teacher is in bad preparation for do the class properly. Was a child like Ivan...

Interviewer: Okay, yes...a very young person?

Nabija: Yes, the unique person that I think is a good teacher there, now have a private school...is a mess...is a mess. When I leave the institute and I talk with my friends about the university all the people close the course and then next year they will start in the university...is a mess.

Luis: You had a bad experience...

Nabija: Yes. Is not a bad experience because I was learning...but I was learning for my proper...

Interviewer: Myself. I was learning by myself.

Nabija: Yes, because I was using the same books that the university and when I arrived to my house everyday I take...I took my books all reading all the things and doing my homework. I was very worried, but I was studying because I was here...

Interviewer: But, you said you had four teachers there. What did they teach, in terms of how was it divided?

Nabija: Is grammar and the grammar is really, really unfriendly and the grammar is not easy...You know my problem...I think my problem with the grammar is for that teacher.

Interviewer: Okay...

Nabija: No is true..is true...I feel bad. Now with Gina, is different.

Interviewer: Yes, of course.

Nabija: Is different...When I have a problem Gina told me don't worry...if you want, say, talk with Amina...is very different.

Interviewer: Okay, so one teacher taught grammar. What did the others teach?

Nabija: Individual learning.

Interviewer: That's what it was called?

Nabija: Is a mess! Can you believe that, for example, me with Yuri and Ivan speaking, speaking, speaking...Individual learning.

Interviewer: And where.s the teacher?

Nabija: Where? Here in the university studying accounts.

Interviewer: So, individual meaning you do it on your own- independent?

Nabija: Yes, and go to your house-I prefer that!

Interviewer: Did they have resources for you to use? Resources? Books? Film? CDs?

Nabija: Two CDs and one page of paper per day...no books. And if you want a book, was $18 per book...And the other class are conversation and listening. And the teacher listening, twelve o clock, at noon. And the teacher...(Yawn)...listening...listening the radio.

Interviewer: I.m sorry to hear about that. Okay, What was your experience like?

Alejandra: I don.t know if you know the book-The New Interchange?

Interviewer: Yes.

Alejandra: I did all the books and did not see my level. There are three books..There are four levels and I did everything. But it was not like Nabija. It was autodidactic?

Interviewer: Yes. Self study.

Alejandra: Yes, is like that. It was like a light course You have an schedule but somebody in class can, didn't came for two weeks, we didn't have class for two weeks. And pay for the level not for time. When you finish a level the course was finished.

Interviewer: What is the advantage of that? Or what is the disadvantage of that?

Alejandra: It wasn't an advance for me. It was...I didn't have anything else. There is another..There isn't another course in San Fernando. It's just.I don't...didn't have anything else.

Interviewer So, if a course...so they would go according to the book?

Alejandra: Yes...yea..

Interviewer: The course-outline...followed the book.: So once you finish the book, the course is done?

Alejandra: Yes

Interviewer: So it means if a course takes five weeks...even if it takes ten weeks or five weeks...It depends on the class.

Alejandra: It depends of the class. Yes, yes...

Interviewer: So it didn't have a schedule. So why did you have a problem with that?

Alejandra: Because the thing was when you are learning grammar, if I wrote a sentence and a sentence was wrong, I need to know why. I need to know what is the difference between my way and the correct way, you know?

Interviewer: Yes

Alejandra: The teacher just say is like this because is easier. And why? I need to know why? And she tried to do that but she didn't. She can't.

Interviewer: Yes...but...She couldn't.

Alejandra: She couldn't.

Interviewer: Yes, but Alejandra, is it different here with grammar. I know I teach you, so..but you need to be honest.

Alejandra: Is totally different.

Interviewer: It's totally different. Okay, so why is it different?

Alejandra: Because if I don't understand properly. If I wrote the wrong word, for example, you have told me why it is wrong and what is the correct way and if you don't want to use that word...or...or you tell us...or in that case, me. If you don't want to write the sentence in that way, you can use that, or every...something else. I need to know why is wrong. I need to know what is the difference in both ways...between both ways...because maybe is not...I can't memorize

the structure and if I want to make, to wrote...two weeks later, I want to wrote a similar sentences, I can't do the same thing..

Interviewer: Because you don.t have the formula.

Alejandra: I need to know why.

Interviewer: You need to know why. And so, did you just do grammar at your school? At your first school? Did you just do grammar?

Alejandra: In Venezuela?

Interviewer: No, in South.

Alejandra: Yes, with the book.

Interviewer: But, no skills? No speaking, listening, reading writing?

Alejandra: No, in the same class she say okay, we going to do a dictation. We read a story and then she make a dictation with the same story. Maybe sometimes you can memorize some words or you can learn the article. And that was easier. On the beginning the course wasn't too bad and in the four months we are three or four levels in the same class. I was studying with a girl that didn.t know to say the colours in English, or the numbers...How can I study with her? I couldn't. And this was three or four levels in the same class. But it was good because I needed to...I needed to do something in San Fernando.

Interviewer: And you studied there for four months?

Alejandra: No, more. I studied there from October to December last year and January to March this year. It's a light course, if you need to learn not too fast, and you need to learn English just for talk and take a cup of coffee or something like that it would help. But just for that.

Appendix B

Grammar structures taught to the Upper-Intermediate group were:

Present Perfect Simple and Continuous, Narrative Tenses, The Passive Voice, Question Formation, Negatives, Future Forms, Expressing Quantity, Modals, Phrasal Verbs, Relative Clauses and Participles, Expressing Habit, Conditionals/ Hypothesizing, Prepositions

and to the Intermediate group:

Auxiliary Verbs, Present Simple/Continuous, Past Simple/Continuous, Modals of Obligation and Permission, The Passive Voice, Future Forms-going to and will, The Gerund and the Infinitive, Present Perfect Simple and Continuous, Phrasal Verbs, First, Second and Zero Conditional and Time Clauses, Modals of Probability, Time Expressions, Indirect Questions and Question Tags, Reported Speech

Using Blogging as a Teaching/Learning Tool in a Postgraduate Teacher Education Programme at The University of the West Indies (UWI): An Activity Systems Analysis

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Abstract. This paper analyses the impact of blogging on teaching/learning in the English Curriculum unit of a postgraduate teacher education programme that had traditionally been taught face-to-face. Since the 22 teachers of this unit met as a whole group only once a fortnight for most of the semester, blogging was used to introduce course content, to promote reflection and research, and to facilitate teacher interaction. Activity systems criteria such as use of tools, distribution of community learning, interplay of contradictions, and achievement of objectives were used to analyse comments posted to topics on the English Curriculum blog. Two post-blog questionnaires were also administered to gain feedback on interactivity and blog outcomes. Findings suggest that while blogging did promote course content dissemination, it promoted little self-generated research. Teacher interaction was highest on topics of current local concern, while reflection, critical thinking, and risk taking varied with length of teaching experience and individual teacher aptitude. Implications are that in transitioning to online learning in the Caribbean, teacher educators should pay attention to cultural issues and to traditions of learning in Caribbean educational systems. They should also be prepared to experiment and indigenize, as teachers acclimatize to the use of technologies.

Introduction

An Overview of e-Learning Initiatives in Higher Education in the Caribbean with Specific Reference to UWI

Marshall (2004) suggests that if the Caribbean is to remain competitive in higher education, it needs to move toward the "radical," self-directed, and autonomous model of e-Learning, even while it implements "standard" and "evolutionary" models. On the whole, the post-secondary school sector is moving toward asynchronous e-Learning (Caribbean Association for Open and Distance Learning [CARADOL], 2005; Kuboni & Martin, 2004; Thurab-Nkhosi & Marshall, 2006) and, currently, UWI is focusing as much on training as on ensuring quality assurance standards (Kuboni 2006a, 2006b; Lee, Thurab-Nkhosi, & Giannini-Gachago, 2005; Thurab-Nkhosi & Marshall, 2006). However, the need for training outstrips sheer capacity to train. Therefore, some level of initiative must be taken by staff of The University of the West Indies (UWI). Thus, after completing an online postgraduate course in Computer-

Assisted Language Learning (CALL) from a United States (US) university, in which blogging was used as a teaching/learning and communications tool, I decided to use blogging for the same purposes with 22 in-service teachers in the English Curriculum group of the Postgraduate Diploma in Education (Dip.Ed.) programme at the School of Education, (SoE), St. Augustine.

Blogging in Higher Education

Blogging began in the social and public domain, but it is increasingly being used in educational settings (Betts & Glogoff, 2006; Brescia & Miller, 2006; Dickey, 2004; Downes, 2004; Ferdig & Trammell, 2004; Martindale & Wiley, 2005; Oravec, 2002, 2003; Stiler & Philleo, 2003; Ward, 2004). Martindale and Wiley, for instance, used public blogging in their graduate courses in preference to e-Learning discussion management systems such as WebCT. Martindale explains: "For my students, the blogs offered a clear advantage over [WebCT-type] discussion forums because the blogs had greater sense of permanence" (p. 59), whereas Wiley found "blogs

to be significantly easier to use" (p. 60). Learning benefits cited in their paper include: the improved quality of course assignments due to the generation of website research and discussion, students' access to their professors' wider intellectual forum and to "big names in the field," much longer and more thoughtful responses, and the development of autonomous interaction within the course community. All the same, Martindale notes that "once [his] course ended, the student blogging also ceased" (p. 59), raising questions about the sustainability of blogging as a learning tool.

Stiler and Philleo (2003), who used blogging in undergraduate pre-service teacher education as a web-based journalling tool to stimulate reflection, also give blogging a positive report. Feedback from their post-blogging survey indicates benefits such as the potential for archiving and the availability of quick day-to-day review. Their reservations include: some students' non-response to sensitive issues such as race and gender bias; problems with set-up and technological issues (which they recommend should be sorted out before initiating blogging); issues surrounding anonymity, privacy, discretion, and giving options to students who have concerns about blogging; and preparing students for and through the process of journalling, giving them time "to think about, prepare, write, and respond to questions and queries" (pp. 795-–797).

Even Brescia and Miller (2006), who are cautious about the effectiveness of blogging in enhancing college level instruction, cite positive outcomes such as "reflection, application, and engagement" (p. 50) as well as interactivity and greater student application due to flexibility of study time. Their major reservation surrounds demand blogging—"when instructors take away the voluntary nature of participation and begin requiring postings and responses to their postings." Nevertheless, they say that although "the temptation for students is to respond simply for the sake of responding and to finish the requirement rather than processing information and learning,"demand blogging can still promote intellectual development" (p. 50). On the whole, a review of blogging in higher education suggests that each implementation and experience is different and largely dependent on the expectations existing or set up within the learning community. Because of its flexibility and my experience with it, I felt it could be adapted for the Dip.Ed.

Rationale for Using Blogging in the English Curriculum of the Dip.Ed.

The Dip.Ed. is a one-year, in-service teacher education programme for secondary school teachers that has traditionally been taught face-to-face. It has a basic structure of (a) in-house classes at SoE and (b) school visits. Most of the in-house classes take place during school vacations and on alternate Fridays during the semester; they are either plenary or curriculum-group sessions. On the other hand, school visits take place during the semester on an individual basis and on alternate Fridays in small peer-teaching groups, supervised by subject teacher educators. This means that during the semester, face-to-face contact among teachers and between teacher educators and teachers is minimal. The infrequent opportunities for meeting during the academic year create challenges for establishing communities of practice, for generating peer support to address common teaching issues, and for maintaining general group cohesiveness.

Therefore, I set up the English Curriculum blog to: (a) promote an interactive, research-and-reflection archive through online discussion; (b) introduce course content through readily available website resources; and (c) engage teachers in communities of practice, while exposing them simultaneously to the wider world of pedagogy in the teaching of English. Like Martindale and Wiley (2005), I used *Blogger* as the meeting place for the English Curriculum blog because of its user-friendliness and its accessibility.

Purpose of the Study

English is only one of eight subject areas in the Dip.Ed. taught under the same face-to-face constraints. Therefore, I felt that the initiative would be a learning opportunity for all. In particular, I wanted information on:

1. The operational dynamics of the English Curriculum blog as a teaching/learning system; and

2. Teachers' views about the usefulness of the blog.

Description of the Participants

During the period of the blogging operations, the English Curriculum unit comprised 3 teacher educators and 22 secondary school teachers (3 male and 19 female) from various regions of Trinidad and Tobago. Seven of the teachers (one of them male) were under my direct supervision. Nevertheless, I made the blog open to the whole group. Blogging was voluntary and ran alongside the normal face-to-face procedures of the Dip.Ed. My two colleagues did not take up the invitation to participate. However, they supported my call for the 22 teachers to do so.

The teachers were all Trinbagonians who taught 12- to 18-year-olds spanning a range of abilities—from struggling readers in public schools, who had scored between 0–30% on primary school exit examinations, to high achievers in government-assisted "prestige" schools. One teacher taught at a private Canadian international school. They taught English-based subjects such as English language and literature, Communication Studies, and Caribbean Studies. Nine were graduate teachers of English for less than 5 years, and nine between 5 and 10 years. This means that only four could be considered experienced teachers, and although some of them had various types of exposure to teacher education, none of them had training to teach at secondary schools. In their own schooling background, the teachers were past students of language and literature in traditional face-to-face Caribbean settings; their predominant assessment traditions being the essay format.

Because of diffuseness and infrequency of meeting times, over the years e-mail has been established as the predominant mode of contact in the English Curriculum unit. Prior to setting up the blog, all the teachers had e-mail accounts and functional computer literacy. To supplement this, I conducted a hands-on tutorial on *Blogger* and gave teachers a take-home guide. The few teachers who were not fully conversant with computers, or did not have computers at home, could access help and facilities at the SoE, at their schools, or at Internet cafés.

Methodology: Using Activity Theory as an Analytical Paradigm

Since my main goals were getting teachers to interact in communities of practice and generating a shared teaching/learning environment, activity theory seemed a logical investigative paradigm. The use of activity theory in collaborative learning, especially human-computer interaction (HCI), is well established (Collis & Margaryan, 2004; Frederickson, Reed, & Clifford, 2005; Jonassen, 2006; Nardi, 1998; Russell, 2002; Scanlon & Issroff, 2005). An activity system is composed of "interacting components (subject, tools, object, division of labor, community, and rules …)" working in subsystems of "production, distribution, exchange, and consumption" to achieve some outcome (Jonassen, 2000, pp. 4–5). A blog, for example, is an activity system, since blogging brings together people who are engaged in a system with in-built expectations, norms, and rules of operation. Figure 1 (Jonassen, 2000) is generally used to illustrate the interlocking components of activity systems.

The subject or subjects are the persons interacting in the system; tools are the artifacts used as the materials for knowledge formation, such as websites, e-journals, books, and so on; objects/objectives are motives or purposes of the learning system set by the users; and the community is the gestalt formed by the people involved in the system, since learning takes place in "communities of practice" and contexts of use (Bødker, 1995, para. 3). Division of labour or distributed learning is generated by the participants, as their exchanges expand or illumine a topic; and the outcome is some measurable evidence of learning. As for outcomes, Nardi (1995) enumerates at least four criteria by which they can be judged:

1. *A research time frame long enough to understand users' objects*, including, where appropriate, changes in objects over time and their relation to the objects of others in the setting studied.

2. *Attention to broad patterns of activity* rather than narrow episodic fragments that fail to reveal the overall direction and import of an activity.

3. *The use of a varied set of data collection techniques … without undue reliance on any one method....*

4. *A commitment to understanding things from users' points of view…*

("Methodological implications," para. 1, p. 47)
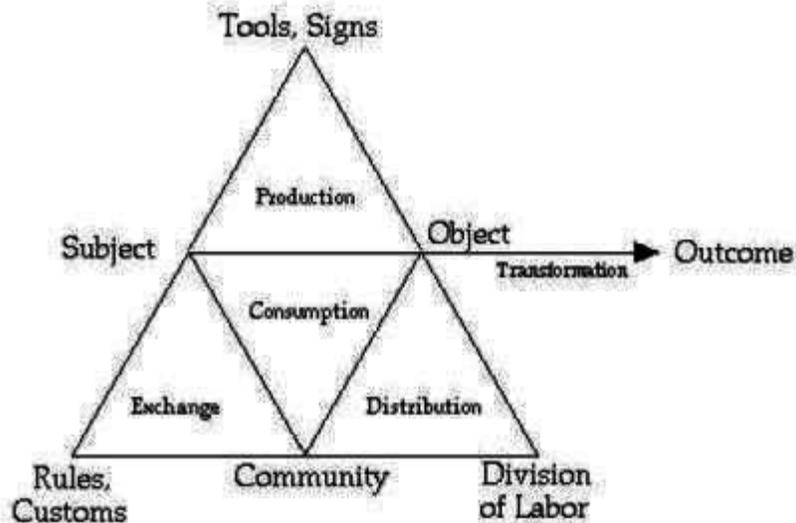
Figure 1. Activity system (Adapted from Engeström, 1987)

Organization and Management of the English Curriculum Blog

I posted nine topics on the blog at intervals of approximately one week apart over the period September to November 2006. Each topic formed its own activity subsystem and unit of analysis within the bigger interlocking English curriculum blog. Topics from the secondary school literature, language, and communication studies teaching syllabi were chosen on the following basis: (a) for their topical nature in the public domain (e.g., censorship of literature—*The Humming-Bird Tree*); (b) for their newness on the syllabus and teachers' likely unfamiliarity with them (e.g., *Developing Oral Communication Skills*); (c) for teachers' expressed difficulty in teaching them (e.g., *Teaching Grammar*); and (d) for the support they could yield to research practices (e.g., *The Literature Review*). The nine topics in order of appearance on the blog were:

1. *Struggling Adolescent Readers*

2. *Project Gutenberg and Bibliomania — Electronic Literary Resources*

3. *100 Top American Speeches: Rhetoric — Electronic Literary Resources*

4. *The Humming-Bird Tree: Teaching Theme*

5. *Developing Oral Communication Skills*

6. *Teaching Grammar*

7. *What is Critical Literacy?*

8. *The Journal of the Imagination in Language Learning: Teaching Resource*

9. *Writing the Literature Review*

Teachers had the option of posting anonymously. However, I suggested that using real names would inculcate ownership of learning and provide validation for comments, particularly if they wanted to use material from the blog in their teaching portfolios (an end-of-programme requirement). Only two unidentified comments were made. These were later claimed by the two teachers, one citing difficulties with posting, the other "self-consciousness" at her first posting. As blog administrator and tutor, I posted under two alternative identities periodically to jumpstart

topics or to act as provocateur. At other times I posted under my own name.

Modelling the Rules of Operation

To indicate to the teachers that I was a member of their community of practice, I used "we" in composing topic prompts. For example, the prompt for the first blog topic read: "Although we were successful last year in many areas of our practice, we intend to experiment specifically with more strategies …." To provide understanding of the topic and to encourage reflection and analysis of teaching content, I suggested teaching benefits that teachers could gain from responding, as can be seen in the prompt for Topic 1. To further cushion the teachers' initial attempts, I initiated the first blog response under an alternative identity, modelling features such as reflection, participation in a community of practice, distributed learning, and analytical use of tools (see blog topic, *Struggling Adolescent Readers*).

Data Collection and Analysis Procedures

The main data for this study consisted of the teachers' responses on the blog at http://5240english.blogspot.com/. Two post-blog questionnaires were also administered (see sample in Appendix A). The first was administered in the week after the last topic was posted to get teachers' self-evaluations on areas such as topic preferences, interactivity experiences, challenges, and opinions on blogging as a learning tool. The second questionnaire was administered two months later in keeping with Nardi's (1995) view of using "a research time frame long enough to understand users' objects" in the assessment of outcomes. Additionally, as blog administrator and teacher educator, I kept a computerized diary of e-mails received and replies sent to teachers. This diary archive consisted of reminders to post, notice of new topics, and advice to teachers who e-mailed about difficulties with posting.

Data analysis was done using the computer-assisted qualitative data analysis software, ANSWR. Coding was based on the interlocking elements of the standard activity system triangle in Figure 1. Codes used were:

1. subjects or participants

2. use of tools
3. objectives
4. evidence of distributed learning
5. generation of communities of practice
6. observance of topic rules/requirements
7. level of interactivity.

"Contradictions" or "breakdowns," a feature of activity systems, was also included as a criterion. Three types of breakdowns, based on Bodker's (1995) formulations were factored into the analysis—(a) breakdowns due to computer problems (physicals); (b) breakdowns due to misunderstanding and misuse of information; and (c) breakdowns/contradictions emanating from ideological tensions and opposition to information during blogging, which could signal the process of change and learning.

Findings and Analysis

The Operational Dynamics of the English Curriculum Blog as a Teaching/Learning System

Of the 22 teachers in the English Curriculum group, two did not participate (one male and one female). Both cited computer problems as the reason. For the 20 teachers who participated, response statistics for the 9 blog topics showed a topic mode of 3, a median of 3, a mean of 3.65, and a standard deviation of 2.00; thus indicating that most participants responded to just one third of the topics, and that the spread between highest and least responses to topics was large. In fact, only 7 of the 22 teachers responded to more than half of the topics, and most of them were the teachers assigned to me for supervision. *The Humming-Bird Tree*, which featured a current controversy surrounding censorship of the Caribbean literature named text, generated most topic responses (13 teachers), while topics that involved manipulation of computer-based tools and foreign-based material, such as *Project Gutenberg*, *Bibliomania,* and *Top American Speeches* generated the least responses (5 teachers each).

The small response to the electronic resource sites needs more follow-up. For, on the one hand, although teachers persisted if they wanted to post, using the computer as more than a glorified

typewriter was new for some, and may have accounted for the low level of posting in some cases. As one teacher wrote, although she posted successfully:

I definitely need more time to navigate around all the resources that are on offer to our curriculum group before I can make a more informed comment. I have to admit that I am a bit overwhelemd [sic] by the technology, though I use my computer everyday. There are some internet resources that I have shied away from for one reason or another. Right now I am not even sure that I am posting my comment in the right place!

However, cultural issues may have been a more important factor. For although many of the teachers who posted found the sites useful, they expressed concerns about the near absence of Caribbean material on the sites and about barriers to access such as the low socio-economic and literacy levels of their students, which could lead to student disengagement. The following posts of two teachers are examples:

(1) *I felt that there are some drawbacks to the teacher that uses Project Guthenberg [sic]. The project excludes Caribbean texts. Thus the student may unavoidably receive the message that the classic Caribbean text and situation are not as important as the classic English, the American etc. those regions represented in Project Guthenberg [sic]. Another effect of using audiotexts that exclude the Caribbean text is that the very students that the teacher is trying to assist may in fact experience alienation from the literature used. Thus, instead of achieving reader ideals (such as reading engagement, lifelong reading, critical literacy) in the student, the teacher thus builds an alliterate or even a weak reader. The teacher must be very wise in her use of the audiotext in a Caribbean setting.*

(2) *Project Gutenberg is indeed an interesting and useful resource in the classroom. However at my school, 80% of students do not have access to the internet nor do they have an appreciation for reading.*

Nevertheless, where cultural adaptation was thought possible, relevant aspects of foreign websites were cited as positives, as the following post for *100 Top American Speeches* illustrates:

Thank you for the web site. It would be an excellent supplement to use in Communication Studies particularly the Internal assessment where part of the students' exams would involve a speech....[I]n terms of analysing language elements, I would use the "I have a Dream" speech by Martin Luther King. This would make an impact on my students since the present American culture has a growing impact on Trinidadian youths especially through Black music (R&B and rap)....While the content of the speech is inspiring to youths to overcome obstacles, the elements of persuasive orating are varied.

On the whole, identification with local and cultural issues seemed a major factor in teachers' response to topics. The high response to the controversial topic of gender and sexuality in the Caribbean novel, *The Humming-Bird Tree,* further supports this view. *Developing Oral Communication Skills* was another topic that generated high response. The latter was a new examination feature of the secondary school syllabus, with which teachers had indicated they needed help, because of their lack of competence with teaching Standard English in the Trinidadian Creole context. However, high involvement did not necessarily mean a high level of research or good use of tools. In their responses to both topics, teachers tended to focus more on personal experiences and their own views, rather than on observing the rules of the blog as an activity system, which required them to bring research from resources (such as websites) that would broaden their teaching approaches. The following post on *Developing Oral Communication Skills* is one example of such limitations:

The aspect of oral communication as regards the lower school is new information for me. We have recently taken in form ones and this is my first term of teaching them. My head of department has yet to bring this oracy aspect of the syllabus to my attention. However, now that I have heard about it I will start doing my research and interfacing with the members of my department to ascertain their knowledge and preparedness for this aspect of the English syllabus.

Thus, although teachers' shared information among themselves, their communities of practice remained parochial.

On observing that teachers were not using the web as a ready resource for the topics *Teaching Grammar* and *Critical Literacy* with which they were unfamiliar, I began to direct searches, providing examples of websites to stimulate discussion. However, many of the responses were merely regurgitations from these websites. The following example from the *Critical Literacy* blog gives little analysis, personal reference, or intimation of how the teacher would use the ideas in her own teaching:

• *Critical Literacy is an ongoing learning process that enables one to use reading, writing, thinking, listening, speaking, and evaluating in order to effectively interact, construct meaning, and communicate for real-life situations….The goal is development of critical thinking to discern meaning from array of multimedia, visual imagery, and virtual environments, as well as written text.*
•*http://www.bridgew.edu/Library/CAGS_Projects/ LTHOMSON/web%20page/literacy%20definition. htm*
• *http://www.ncrel.org/sdrs/areas/issues/content/ cntareas/reading/li300.htm*

On the whole, low levels of critical thinking was not the norm on the blog. Nevertheless, on topics where teachers were making accommodation to new information and teaching strategies that were not of a cultural nature, there was a tendency to individualistic, exercise-driven responses. Few teachers posted more than once on any topic, again suggesting that they were not engaged in dialogue, but responding in the traditional paper-based assignment mode.

With regard to interactivity, *The Humming-Bird Tree* was the topic during which teachers made most sustained reference to each other. In most of the other topics, they posted without addressing each other directly; nor did they link or thread ideas. This tendency to individualistic response seemed to be associated with factors such as teacher personal linguistic style, textbook attitudes to learning, unfamiliarity with the topic being discussed, years of teaching experience, and type of school at which the teacher was teaching.

The comments of the two males on the blog on *The Humming-Bird Tree* are representative examples. One male was in his early thirties, the other in his late thirties; one had been a graduate secondary school teacher for 10 years, the other for only 1 year; one taught at a prestige school, the other at a low-achieving public school. Both responded to few topics; one to four and the other to three, and in this last respect, they can be thought to represent the mean. However, while the longer-serving male, who taught at a prestige school, did not refer to any colleague by name, his style was very interactive. The following excerpt illustrates:

Upon preliminary reading i dont [sic] see what all the fuss is about…it is quite common for a speaker who is so emotionally engaged with his subject to become base especially if that person is not possessed with the gift of 'gab' there is nothing startling about this. i may go so far as to ask the class to 'look' into their own repertoire of verbally assaultive language. is there a realistic assault tone to these words or are these hyperbolic?….The Buddah of Suburbia.. those of you who do not know dealt with themes as these though much more explicitly.…Chaucer expounded on these issues in the Nun's tale.

The high level of engagement above contrasts with the following short response from the other male that comes almost at the end of topic:

I was asked to give my views on the Hummingbird Tree during an interview. I tried to say that text should be taught in context. However now I will say that text should be taught to suit the psychological level of the student.

The stilted tenor and the lateness of this posting suggest "lurking" (visiting the blog without necessarily becoming involved in posting). However, these very two factors indicate that the blog was serving as a site for reflection, gestation, and ideological change. Also, as is evident from the shorter response, a low level of interactivity did not mean that there was diminished division of labour or limited distributed learning. Teachers rarely repeated each other's ideas, suggesting that they were reading each other's posts, although their interactive behaviour did not signal that they were doing so. Of note, too, is the fact that the

teachers who posted most often did not necessarily have the most reflective statements, share most information, or show strongest evidence of enhancing communities of practice. As with the two males above, personality, attitude, intellectual acumen, and literary awareness of individual teachers were larger factors in the level of thoughtful exchange on the blog.

Teachers' Views About the Usefulness of the Blog

Outcomes of activity systems are not customarily assessed in limited time frames (Engestrom, 1999). Therefore, I administered two post-blog questionnaires—the first questionnaire, one week after the last topic was posted and the second, two months later—to gain more comprehensive feedback about the blog. A major objective of the second questionnaire was to gauge whether the blog was still having an effect on teachers' practices after a delayed interval. Seventeen of the 22 English Curriculum teachers responded to post-blog Questionnaire 1 and 16 to Questionnaire 2.

Teachers' responses revealed that by far the most frequent reason for the low levels of posting was time constraints. Extrinsic factors such as "tutor reminder" and the desire "not to seem delinquent" propelled them most often to post; while intrinsic factors such as topic interest and curriculum relevance took second place. An interest in interaction was cited twice as prompting posting, while self-motivation was cited only once. Nevertheless, all the teachers who responded found the topics and the exchange on the blog helpful. Some indicated that they had become aware of website resources that they had not known of before and this had stimulated spin-off initiatives they were considering for the future. For example, arising out of using *Project Gutenberg*, one teacher wrote:

I have used the idea of the audio book in a few of my classes (Macbeth) but due to time [I was] unable to continue. A good idea though and one that I am sure to continue using. I am also thinking of recording excerpts from various books on the curriculum to use in class next term.

One teacher with Internet access in her classroom introduced her class to blogging: "*It [the blog] has*

made me rethink talk in the classroom. I now include techno talk, and blend it differently now with the oral, visual and other literacies....The blog is teen-friendly...." Another teacher, who had no Internet facilities at her school, had started a paper blog:

My Form 3 students...wanted to have a blog of their own but since our school does not have lab facilities with internet access, I decided that we would create a blog using flipchart paper on the back of the classroom. Every week I provide a topic and provide them with paper to write and 'post' their contribution.

Additionally, Questionnaire 2 revealed that teachers were using information from the blog two months after it had closed in the preparation of their action research project, which required each teacher to create and implement an intervention of lessons to address a curriculum problem with a class. All the same, only one teacher had set up a blog, although the majority of them said that their teaching had been influenced by the blog. Two cited lack of technological know-how and one Internet access as reasons. However, eight said they had visited other blogs. More follow-up is needed to be able to assess whether the use of material from the blog two months after was merely opportunistic. Further, considering the negative impact of time constraints on the initiative, and that many of the teachers felt they would have more time to implement blogging "after Dip.Ed.," it would be useful to find out whether the blogging experience achieved any sustained effect.

My Insights as Teacher-Educator and Implications for Future Use

Major challenges for me as teacher-educator were: (a) dealing with silence and reticence on the blog, and (b) the time-consuming nature of preparation of prompts for the topics. With regard to dealing with silence and isolation, Benfield (2001) suggests "face-to-face induction" to HCI and "get to know each other sessions" prior to the start of online classes (para. 5). He also considers defining expectations, developing a persona or voice, and devoting space to "social" communication, to be just as important in online as in face-to-face

teaching. In retrospect, I realize that I definitely needed to pay greater attention to social communication. For although there was much in the affective domain on the blog, my preoccupation with academic objectives and fear of losing control to lightweight conversation suppressed the teachers' wider communication needs. Creating social forums might have engendered more trust and less isolation as well as generated better and more sustained learning outcomes.

Also, my decision to limit my voice on the blog and at times to disguise it, using alternate identities for fear of seeming to dominate, might not have been wise. A more prominent and sensitive voice might have led to better achievement of objectives. Additionally, I could have allowed the teachers to share administration of the blog. For although half of those who responded to Questionnaire 2 indicated that they were comfortable not initiating topics, either because of time constraints, or because they preferred to respond to my directives as tutor, the other half wanted "to be allowed an opportunity to guide the discussion," "to converse with others in class about stressful areas (like deadlines)," and to "have been given the opportunity to express [their] concerns regarding teaching and the Dip.Ed. Program."

Preparing prompts was very time-consuming and just as challenging for me as dealing with blog silence. I found myself constantly revising the wording of topics to achieve the "right" tone to entice the teachers to respond. In retrospect, doing seminars with the teachers, prior to and during blogging, on how to do Internet searches and how to analyse, reflect on, exchange, discuss, and thread ideas in an online learning community would have been more effective. For as a user of different kinds of web-based material, I had adapted to various cultures and modes of online communication that I assumed the teachers were proficient in, since we communicated regularly by e-mail.

Overall, I consider the aims of the English Curriculum blog to have been moderately achieved. As stated earlier, these were to: (a) promote an interactive, research-and-reflection archive through online discussion; (b) introduce course content through readily available website resources; and (c) engage teachers in communities

of practice, while exposing them simultaneously to the wider world of pedagogy in the teaching of English. Undoubtedly, carrying their face-to-face operations alongside voluntary participation in the blog resulted in academic overload. As a result, for the future I would suggest that, since the experience showed that blogging can promote interactivity, research, and reflection on curriculum content, it can be integrated into the Postgraduate Diploma in Education at UWI, once attention is paid to cultural issues and traditions of learning in Caribbean educational systems.

References

Benfield, G. (2001). *Teaching on the web: Exploring the meanings of silence*. Retrieved December 27, 2006, from http://ultibase.rmit.edu.au/Articles/online/benfield1.htm

Betts, J. D., & Glogoff, S. J. (2006). Instructional models for using weblogs in e-Learning: Case studies from a hybrid and virtual course. *Campus Technology*. Retrieved December 27, 2006, from http://campustechnology.com/print.asp?ID=9829

Bødker, S. (1995). Applying activity theory to video analysis: How to make sense of video data in human-computer interaction. In B. A. Nardi (Ed.), *Context and consciousness: Activity theory and human-computer interaction* (pp. 147–174). Cambridge, MA: MIT. Retrieved April 4, 2007, from http://www.ics.uci.edu/~corps/phaseii/nardi-ch7.pdf

Brescia, W. F., & Miller, M. T. (2006). What's it worth? The perceived benefits of instructional blogging. *Electronic Journal for the Integration of Technology in Education (EJITE), 5*. Retrieved December 27, 2006, from http://ejite.isu.edu/Volume5/Brescia.pdf

Caribbean Association for Distance and Open Learning (CARADOL). (2005, February). *Launch & symposium report*. Retrieved April 1, 2007, from http://caradol.dec.uwi.edu/reports/caradol_report_on_symposium_05-02-18.doc

Collis, B., & Margaryan, A. (2004). Applying activity theory to computer-supported collaborative learning and work-based activities in corporate settings. *Educational Technology Research and Development, 52*(4), 38–52.

Dickey, M. D. (2004). The impact of web-logs (blogs) on student perceptions of isolation and alienation in a web-based distance-learning environment. *Open Learning, 19*(3), 279–291.

Downes, S. (2004). Educational blogging. *EDUCAUSE Review, 39*(5) 14–26. Retrieved December 27, 2006, from http://www.educause.edu/pub/er/erm04/erm0450.asp

Engeström, Y. (1999). *Activity theory and individual social transformation.* Retrieved from University of Miami website: http://www.education.miami.edu/blantonw/mainsite/Componentsfromclmer/Component1/engestrom.html

Ferdig, R. E., & Trammell, K. D. (2004, February). Content delivery in the 'blogosphere.' *T.H.E. Journal*. Retrieved December 27, 2006, from http://thejournal.com/articles/16626_5

Frederickson, N., Reed, P., & Clifford, V. (2005). Evaluating web-supported learning versus lecture-based teaching; Quantitative and qualitative perspectives. *Higher Education, 50*, 645–664.

Jonassen, D. H. (2000, October). *Learning: as activity*. Paper generated for The Meaning of Learning Project, Learning Development Institute, Presidential Session at AECT Denver. Retrieved December 27, 2006, from http://www.learndev.org/dl/DenverJonassen.PDF

Jonassen, D. H. (2006). *Technology as cognitive tools: Learners as designers* (ITForum Paper #1). Retrieved December 27, 2006, from http://it.coe.uga.edu/itforum/paper1/paper1.html

Kuboni, O. (2006a, October). *Communicating for the purpose of learning in the online environment: An analysis of student-initiated communicative acts in UWIDEC's blended learning pilot project*. Paper presented at the 4th Pan Commonwealth Forum on Open Learning, Ocho Rios, Jamaica. Retrieved April 1, 2007, from http://pcf4.dec.uwi.edu/viewpaper.php?id=323

Kuboni, O. (2006b, October). *Report of the moderator on Theme 4: Innovation, Pre Pan-Commonwealth Forum on Open Learning 2006 virtual conference*. Retrieved April 1, 2007, from http://www.col.org/colweb/site/pid/4223

Kuboni, O., & Martin, A. (2004). An assessment of support strategies used to facilitate distance students' participation in a web-based learning environment in the University of the West Indies. *Distance Education, 25*(1), 7–29.

Lee, M., Thurab-Nkhosi, D, & Giannini-Gachago, D. (2005). Using informal collaboration to develop quality assurance processes for eLearning in developing countries: The case of the University of Botswana and The University of the West Indies Distance Education Centre. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 2*(1), 108–127.

Marshall, S. (2004). *Blended learning/asynchronous delivery: A UWIDEC project for 2004/5*. Retrieved April 1, 2007, from http://www.dec.uwi.edu/smarshall/apc/apc_04_10_27_p4.pdf

Martindale, T., & Wiley, D. A. (2005). Using weblogs in scholarship and teaching. *TechTrends: Linking Research & Practice to Improve Learning, 49*(2), 55–61.

Nardi, B. A. (1995). Studying context: A comparison of activity theory, situated action models, and distributed cognition. In B. A. Nardi, (Ed.), *Context and consciousness: Activity theory and human-computer interaction* (pp. 35–52). Cambridge, MA: MIT. Retrieved April 5, 2007, from http://www.ics.uci.edu/~corps/phaseii/nardi-ch4.pdf

Nardi, B. A. (1998). Activity theory and its use within human-computer interaction. *Journal of the Learning Sciences, 7*(2), 257–261.

Oravec, J. A. (2002). Bookmarking the world: Weblog applications in education. *Journal of Adolescent & Adult Literacy, 45*(7), 616–622.

Oravec, J. A. (2003). Blending by blogging: Weblogs in blended learning initiatives. *Journal of Educational Media, 28*(2-3), 225–233.

Russell, D. R. (2002). Looking beyond the interface. Activity theory and distributed learning. In M. R. Lea, & K. Nicoll (Eds.), *Distributed learning: Social and cultural approaches to practice* (pp. 64–82). New York: RoutledgeFalmer. Retrieved April 5, 2007, from http://www.public.iastate.edu/~drrussel/papers/Russell_AT&DL.doc

Scanlon, E., & Issroff, K. (2005). Activity theory and higher education: Evaluating learning technologies. *Journal of Computer Assisted Learning, 21*, 430–439.

Stiler, G. M., & Philleo, T. (2003). Blogging and blogspots: An alternative format for encouraging reflective practice among preservice teachers. *Education, 123*(4), 789–798.

Thurab-Nkhosi, D., & Marshall, S. (2006). Defining a quality assurance tool for web-based course development and delivery at the University of the West Indies Education Centre. In B. N. Koul & A. Kanwar (Eds.), *Perspectives on distance education: Towards a culture of quality* (pp. 97–112). Vancouver, BC: Commonwealth of Learning. Retrieved April 1, 2007, from http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/PS-QA_chapter7.pdf

Ward, J. M. (2004). Blog assisted language learning (BALL): Push button publishing for the pupils. *TEFL Web Journal 3*(1).

Appendix A
Sample Post-Blog Questionnaire

About Blogging in General

A. Was the English Curriculum blog your first time at blogging?
   (Circle one)   Yes   No

B. Did the tutorial help to make blogging easier when you were on your own?
   Yes   No

C. What did you know about blogging before blogging for this course?

About the English Curriculum Blog 2006-2007

1. Did you post on the English Curriculum blog?
   (Circle one)   Yes   No

2. If not, what factors caused you not to post?

3. If yes, to what topics did you post?

4. What prompted you to post?

5. Were you able to express yourself as you would have liked to on the blog? Explain.

6. Were the topics helpful? Explain.

7. Were the comments posted to the topics useful? Explain.

8. Were there topics that you would have liked to see on the blog that were not there? Examples?

9. Would you have liked to post your own topics? Explain.

10. What is your opinion of blogging as an educational tool?

An Alternative Language Experience Approach for Selected Creole-Influenced Students

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Abstract. This paper explores the notion that to assist problem/struggling readers in Trinidad and Tobago, it is necessary for teachers to have a knowledge of how language is used in the community and how communication events occur there. These can be the basis for patterns of interaction with texts written in English where both learners and teachers are speakers of Trinidadian or Tobagonian Creole English. The speech acts fall within the learners' "experience" of their language and can be used creatively by teachers for the better comprehension and production of (International) English texts.

The Problem

This paper explores the notion that to assist some "problem readers" at the secondary school level in Trinidad and Tobago, it is necessary for teachers to have a knowledge of how language is used in the communities from which their students come and how communication events occur there.

The Language Experience Approach (LEA) in reading is a well-known method that entails using the students' own ideas, experience, and language as the basis for forming stories that are used as reading material.

Teachers can encounter a problem when using LEA with secondary and adult Caribbean students. This problem is one where the ambivalent and contradictory attitudes towards Creole English may prevent use of the students' first language for writing down their stories and then using them as reading material. Translation of these stories into Standard English would occur at some later stage when the student is ready for this.

Using the learner's own language for writing down their stories presented difficulties for white tutors of Caribbean adult literacy learners in England. The process was seen as putting them into "a dialect mold" when they wanted to learn to speak and read Standard English (Schwab & Stone, 1985).

This writer also encountered some opposition to using the learners' own language as a basis for LEA stories. This occurred in the following manner.

In the mid 1980s, I attempted to build LEA shared/group stories using the students' Creole-type English at the Matilda Comprehensive School with some "struggling readers." I explained to them why we (the tutors and myself) were doing this, and a small crisis occurred. A group of students objected "fiercely" to the use of Trinidadian Creole English (TCE) to form stories for their reading material. Of 50 students, more than 30 of them preferred to use Standard English as the starting point for their stories. The objection took me by surprise (Creole being referred to as "DAT" language) and the composition of stories in TCE had to be abandoned.

Instead, through informal interviews (chats) and classroom observations I gained some insight into how the young people felt and thought about their language. They described how they used language for communication in their homes and communities (Hymes, 1976). I saw this as comprising their own unique "experience" of language. How can one use these "ways of speaking" and communicating to bring about better comprehension of written English text? Can this be done in a way that will overcome the ambivalence and contradictions that are inherent in societal attitudes towards Creole—even in its present form today?

These, what one may call, "communication experiences" can be the basis for patterns of interacting with text written in English where learners have difficulty in reading such text, and where both learners and teachers are speakers of

Trinidadian Creole English and know the contexts of its use.

Hymes wrote about communication in the classroom as something beyond a grammar of English (to be taught). His model is over 30 years old, but it still applies today and strikes at the heart of understanding spoken and written text in the context of Trinidad and Tobago classrooms:

> For language in the classroom, what we need to know goes far beyond how the grammar of English is organized as something to be taught. It has to do with the relationship between a grammar of English and the ways in which English is organized by teachers, by children, and by the communities from which they come; with the features of intonation, tone of voice, rhythm, style that escape the usual grammar and enter into the essential meanings of speech; with the meaning of all those means of speech to those who use them and those who hear them, not in the narrow sense of meaning as naming objects and stating relationships, but in the fuller sense, as conveying respect or disrespect, concern or indifference, intimacy or distance, seriousness or play etc., with the appropriateness of one or another means of speech, or way of speaking to one or another topic, person or situation; in short with the structure of language to the structure of speaking. (Hymes, 1972, p. xiii)

It is within this framework of communication that one can begin to understand how learners and teachers experience their use of language in home, school, and community. The ideas that are expressed in this paper may be seen as an alternative to the Language Experience Approach to reading for selected students who are primarily speakers of Trinidadian Creole English..

Literature Review

This section informs the "theory" that undergirds the alternative Language Experience scheme which this paper will suggest. The section unfolds as follows:

1. Attitudes to Creole and Standard English that affect education
2. Literacy and language – A sociocultural perspective
3. LEA and Craig's Augmented Language Experience Approach
4. Communication and verbal styles

Attitudes to Creole and Standard English That Affect Education

The "saga" of Creole English versus Standard or (Internationally Acceptable) English in the Caribbean is beleaguered with many negatives. Ferreira (1980) described the sociolinguistic situation in Trinidad and Tobago as one where, what she calls, Trinidad English or Internationally Acceptable English (IAE) is the "social acrolect," and Trinidadian Creole English, which includes Tobagonian Creole, is the "social basilect." These two stand at the extreme poles of the continuum, with many mesolectal and basilectal varieties in between. She saw present-day Trinidadian Creole as "a heavily decreolized variety with only a few vestiges of the old basilect." In today's classroom, the language of the majority of our students (Trinidad Creole and Tobagonian Creole) is still seen by teachers as not having the capacity for expressing their thoughts and ideas, even orally, so that the message and meanings of students remain unheard. These negative attitudes are inherited from a colonial past, and although they may be changing slowly, Creole languages in the Caribbean have not been viewed as relevant for use in formal education.

Creole languages are used mainly for "everyday interactions" and "informal functions," whereas the Standard languages have more formal uses as in education, the church, and the court (Robertson, 1996). Creole has found a niche in written examinations in the region where dialogue can be written in Creole. In classroom activity, skits, poems, and novels with "stretches" of narrative written in dialect are now seen as more socially acceptable than in years gone by. Yet, in spite of its power to move audiences in public performances, for example, in humorous shows, the vernacular is still viewed as a degenerate form of Standard English.

James (2003a) is critical of this negative attitude, especially in teachers:

> Most people think, erroneously, that English is good, authentic language but Creole is not. This ignorance and the consequent misguided attitudes…are a critical part of the problem of teaching Standard English in our part of the world. The situation is so bad that nothing short of a public campaign of sensitisation and re-education about the linguistic status of Creole versus Standard English is needed. (para. 7)

Creole is a language in its own right, and James (2003a) advocates a second language approach to teaching English to speakers of Creoles in the Caribbean: "it [English] should be taught as a second language, with no attempt made to replace Creole with it. English would then be another language resource that Creole speakers would have" (para. 10).

Craig's (1976) account of Caribbean socio-linguistics is also very relevant today. His article describes an area of interaction between the communities' social Standard and Creole speech where the cross influences of the continuum merge and flow and clash, and where students are most likely to experience difficulty in acquiring the prized goal of Standard English because of the complexity of social relationships in this turbulent linguistic space.

What are the implications of Craig's interaction area for learning how to read English text? The challenge is to find or devise a "teaching-learning tool" for some students based on their ways of speaking, one that will allow them to access meaning from English text. This "tool" will employ their unique sociolinguistic or communicative experience.

Literacy and Language – A Sociocultural Perspective

James (2003b) gives a brief definition of human language as "a complex phenomenon that, among other things, is a system of sounds organised for the expression of meaning or message in social contexts" (para 1). The term "in social contexts" here is important, since writers such as Gee (1996) and Cook-Gumperz (2006) see language as a part of literacy and have emphasized a sociocultural perspective of literacy.

According to Cook-Gumperz (2006), literacy "as socially constructed …is best regarded as part of an ideology of language, a sociocultural phenomenon where literacy and orality co-exist within a broader communicative framework, not as opposites, but as different ways of achieving the same communicative ends." It is more than just having encoding and decoding skills for providing technical skills, but also "a set of prescriptions about using knowledge." In this sense, literacy "is a socially constructed phenomenon, not simply the ability to read and write…(it is) a set of context-bound communicative practices" (pp. 3-4).

Both Gee (1996) and Cook-Gumperz (2006) have been critical of the traditional view of literacy. According to Gee, this view of literacy as the ability to read and write "rips (it) out of its sociocultural contexts" and has little or nothing to do with human relationships (p. 46).

What is important in the sociolinguistic perspective is how literacy is constructed through conversational exchanges and "the negotiation of interactional meanings in many different contexts of schooling." So that according to Collins (2006), interaction matters; talk in context matters, that is, teacher and student talk about a given text as this emerges from situated communicative events, for example, how a teacher talks with students about given texts both influences and responds to how students read. In addition, students read aloud from a given text in ways that reflect their talk in other settings, thus enacting differing views of what reading is.

With this in mind, the view that this paper presents about reading (and literacy) with local students is basically a sociolinguistic, sociocultural one, where the students' own talk strategies or discourse "patterns" provide the stimuli for making them excited about reading and learning Standard English and being successful at it.

LEA and Craig's Augmented Language Experience Approach

According to Hall (1981), "the language and the thinking of the learner are used as a foundation for reading instruction in LEA. Each learner's language and personal experiences are used to

create reading material that helps to show the relationship between written language and his (her) already familiar oral language" (p. 11).

Most LEA experts advocate writing down the learner's stories in their own words just as they dictate them, so that they can see their language and ideas as valuable.

As far back as 1975, O'Donnell described the LEA process. It is still used in this way today. After spontaneous conversations with learners using interesting topics as stimuli, the tutor should record several sentences. S(he) must accept the language "as is given by the student" initially. "Premature insistence" upon "proper usage," he said can stifle "the spontaneous language and may result in language episodes that do not fully conform to the pupil's natural, oral language patterns" (p. 28). But what if the language patterns themselves sometimes create attitudinal confusion in the users? [this writer's question]

Perhaps the only LEA model so far that caters specifically for Caribbean students is Craig's (1999) "Augumented Language Experience Approach." According to Craig, LEA schemes in use in some local schools proceed as if the "language to be read" (Standard English/IAE) "is the first or home language of the learner" (pp. 97–99). In his augumented approach, he gave both the language to be read and the ideas to be communicated equal attention. He did not focus on the learner's ideas only. In his scheme, learning English grammatical structures and patterns followed discussion of experiences in the vernacular. The structures to be learned are selected by the teacher from student responses during discussion. The next step is copying and oral reading of the English compositions or stories. The teaching of reading skills and other related activities, for example, listening and art are also included.

This paper will propose another kind of LEA scheme for Creole-influenced students, based on their knowledge of how talk is used in their social environment.

Communication and Verbal Styles

Two accounts that are very relevant to developing the alternative LEA which this paper proposes are: Hymes' (1976; also more fully developed in Saville-Troike, 2003) ethnography of communication framework and Rohlehr's (1990) description of calypso rhetoric in Trinidad.

Hymes' (1976) framework for the study of communicative events is important, since its use can provide information on the communicative repertoire of students and teachers and how they see themselves as users of language in school and community settings. Also, in order for our "selected students" (i.e., those who experience difficulties in expressing themselves in Standard English and in reading the same) to become better readers and manipulators of English, having teacher-to-student and student-to-student conversational interactions with written text is desirable. So that interactions in the classroom setting can be based or adapted from some of the same interactional patterns that the students already know; or such patterns that will make them want to participate in literacy-as-communicative events in their classrooms for increased comprehension of both written and spoken texts and their own production of Standard English texts. In other words, using the students' "meanings" to help them to experience further meaning.

An investigation of the components of communication (in a speech event) according to Hymes (1976), in terms of participants, message form and content, setting, purposes of speech, linguistic codes, topics, and norms of interpretation will provide a description of how members of the community communicate. It "may" also provide what one may refer to as "strategies for talk" or "thought patterns" (for want of a better term) that go along with the types of talk. Can these "strategies" give a clue as to how students may think about written text? Both Labov (n.d.) and Hymes (1976) have hinted at the possibility that speakers such as Afro-American students (and, by extension, Caribbean students) have a different, innate verbal logic of their own. Can "ways of speaking" provide the much-needed solution to this problem?

Any attempt to teach literacy in Trinidad (and Tobago) without some socio-historical notion of the value of words in Trinidadian contexts will meet with some futility. Tobago has its own unique values.

Rohlehr's (1990) description of calypso rhetoric provides some enlightening insights of how this genre has evolved. This account matches

very closely at some points with how students described their own ways of speaking.

According to Rohlehr (1990), picong, ridicule, and improvisation (extemporizing) are West African-derived elements of speech, and the use of long words and fine expressions came about as a result of the "anglicizing process" in Trinidad at the turn of the 20th century when education meant "mastery over words" and when French patois began to be on the wane (pp. 25–67).

Words are also used as a "mask," to mask feelings (for a variety of purposes). More than 50 years ago, Herskovits (1947) mentioned the use of "indirection" (as contrasted with directness in address) as a feature of speech among Afro-Trinidadians. This indirection could be as a result of using words as a mask.

Verbal duelling was a part of the repertoire of Carnival characters such as Midnight Robbers (robber talk) and the Pierrot. Verbal challenging of this kind ranged from bombastic, high-flown speech identifying self with allusions to power, to grand verbal displays where the warrior is a man of much education, whose vast knowledge covered major literary works as displayed in his use of words (Rohlehr, 1990, p. 67).

"Bombast" as a way of speaking is still a normal teenage male style in Trinidad and Tobago and, with its cumulative, poetic-type repetition of detail, can be a major literacy-facilitating factor for that group of students. The verbal challenge is another speech act that can be exploited to facilitate literacy with its attendant "strategies" of improvising or extemporizing.

What Rohlehr (1990) called "the grandiloquent tradition" (p. 67) or use of "big words" or high-flown speech is still very much alive. Many students manifest a fear of "big words" and this produces oral reading avoidance; or some students feel that they must use "big words," especially in writing, to impress the teacher. Robber talk as a speech act in everyday interaction today in a classroom setting means being "full of hot air" and so could mean senseless talk. Yet it is replete with drama as in the script of a Carnival character, the Midnight Robber.

Also, in calypso, the profane is always polarized against what is decorous or socially acceptable (Rohlehr, 1990, p. 51). In the language of some of our students, these polarities exist in no

uncertain terms and were voluntarily pointed out and categorized by the students themselves.

Both Rohlehr's account and the students' account of their verbal styles "coalesced" on the point of "knowing bounds or limits" in speech. When calypsoes were mainly a war of words, one could "go beyond the bounds of verbal propriety," where nothing escaped the barb of the bard. However, there had to be a cap on tolerance (Rohlehr, 1990, p. 111). "Bounds" also denotes property limits, which is a touchy subject in many parts of Trinidad and Tobago. It is interesting that students pointed this out as a feature of knowing the limits of jokes and humorous insults.

Since this factor is such an important part of Creole verbal behaviour, this, as well as other aspects of speech, cannot be ignored in any consideration of creating a literacy-rich environment for local students, given the setting of many of our schools, especially in urban areas.

Method of Investigation

The collection of data for the alternative LEA "scheme" took a number of patient years from 1986/87 until the present time, 2007. Initially, a small number of students were participants. These were mainly male teenaged students of the Matilda Comprehensive School. The Form teachers sent them to my "remedial reading class." They lacked mainly decoding or word recognition, and comprehension "skills." In 1988, a second wave of students came.

These first two sets of students (1986 and 1988)—about 50 in all—provided the categories about what they knew of how their language was organized. Then from 1986 to 1992, more batches of students came, not simply for remedial reasons; the school reading room seemed to attract "good" readers because of the material we placed there. In all these years some 100 students participated in the school's reading project, which was linked to the public library in the town—Princes Town. The language categories were "ratified" and extended by later groups of students and teachers.

My position throughout was a curious one. I was an English Language teacher at the school so I taught regular classes, and in an after-school setting I met with "remedial" students. I viewed myself as a teacher-researcher who was deeply involved in teaching reading and looking for new

ways to help students to improve in both English language and reading. Like some other teachers, I interacted with all of my students in both Trinidad Creole and Standard English within the classroom and outside of it. The students were 14+ to 17 years and were Afro- and Indo-Trinidadian males and females.

At this period, Erickson's (1986) strategies for data collection informed the process. Because of "my curious position" and the empathy I felt for the students, I saw what I was doing as more of a "drawing" from ethnographic methodology than the process being purely so. The project was constantly evolving and, in 1994, I moved to another job in the Ministry of Education where I was no longer directly in touch with students on a daily basis. From 1994 to 1997, and again in 2007, I was in touch with teachers and teacher-trainers. Throughout different periods over the years, I made notes (field and interview). I interviewed, informally, students, teachers, teacher-trainers, reading facilitators, student teachers, and some "lay" persons, mainly to elicit categories on ways of speaking in Trinidad, and to "validate" the categories of talk that I had obtained from students in 1986–1988 and to explain what verbal cognitive strategies participants thought were involved in their use.

It is unfortunate that I was not equipped to tape extended examples of various speech acts, but through intensive interviews with several participants who are knowledgeable about ways of speaking in Trinidad (and Tobago), I obtained examples and descriptions of categories and what they thought were some of the accompanying strategies—especially as this pertains to the speech event "old talk."

I gave my own twist to Erickson's (1986) notion of "validation" (pp. 108–109). Data collection started "small" and then it unwound. However, it stayed small and particular in order to discover the levels of "particularity" of the specific case in hand. Upon discovering the particulars (viz., categories of how language is organized by students and by adults) in small groups, and by observing and participating in interactions with participants who were primarily in one school setting, I moved out to other settings and surveyed groups of students in five other schools, asking them to confirm the particulars (categories of language-in-use). Over time, that is,

between 1986 to 2007, approximately 200 participants came "in touch" with these categories, initially in small groups (interviews) and later in larger groups for survey-type purposes.

Description of Findings

This description will proceed along the following lines, using student-derived categories:

1. Student preference of Trinidad Creole or Standard English for LEA stories
2. The "Polite"—"Ignorant" dichotomy
3. Knowing bounds or limits: "knowing when to stop so you don't violate a person"

Student Preference of Trinidad Creole or Standard English for LEA Stories

Fifty-seven students were given copies of an LEA story written in Trinidadian Creole English and they were asked to identify the language and to write how they felt about using it as a reading lesson. They responded as follows:

Table 1. Students' Identification of Kind of Language

No. of Students	Language Identification
28	Broken English
6	Personal language
4	Proper English
4	Improper English
1	Trinidad slang
2	Dialect
4	English you'll use with friends
1	Home English
7	Everyday broken language

While 37 of them preferred the story to be in "proper English," 20 preferred the use of "broken English" or "our own Trinidad slang."

Another group of 47 students were given two versions of the same story and they were asked to state which version of the story they preferred to use as an LEA reading lesson with struggling readers. They were to give reasons for their choice.

- 19 students wanted the Creole version for struggling readers

- 28 wanted the SE or, as they called it, the "Proper English" version

Remarks against the Creole version:

This language is encouraging young readers to speak this broken English.

Problem readers would understand it better....but it is better to learn to speak Proper English.

I would prefer Proper English because (if) they are called for a job they would say that they (the problem readers) have no training whatsoever.

Remarks for the Creole version:

It is very short and easy to read.

The English used is like if they were talking at home.

There are a few people who cannot read that well, do not start them off with something hard. Start them off with something easy.

Start them off with something they know. When you feel they are ready for the Standard English then you teach it to them.

The "reasonableness" of these last responses demonstrates a remarkable understanding of the LEA process; one in which these 47 students had never been involved. It demonstrates, too, the link in the minds of some students between learning English and reading—a link that educators have neglected (Craig, 1999). Not only this, but the Standard English-Creole English tension is constantly there with students. It is as much a part of the local classroom scenario as it is at constant play in the wider society (James, 2003a, 2003b; Robertson, 1996). In a classroom setting, both teachers and students are caught in the conflicting ambiguities of propriety versus impropriety, decorum versus freedom and licence, control versus the fear of lack of control (in social behaviour), which are associated with the Creole vernacular, and yet Creole is the expression of

genuine feeling (Joseph, 1978). One of the responses above refers to using Trinidadian Creole in a formal situation as a demonstration of "having no training whatsoever."

The "Polite"—"Ignorant" Dichotomy

Students spoke about their verbal experiences readily. And just as in social and calypso life the sacred is juxtaposed with the profane, so too with verbal styles. According to the first small group of six students, speaking in "polite" ways, which earns respect, is juxtaposed with "ignorant" and obscene ways of speaking and thinking. But being ignorant does not necessarily mean being obscene. The students observed that talking "polite" is talking nicely to a person; talking "sweet" to them and being kind. Standard English is used for "polite language," they said. And "trini talk" or Trinidadian Creole English is usually used for more "vulgar talk." Although they condemned the use of obscene language, they admitted to using it with peers, since it brought them "fame" and respect through "fear" and made them popular.

Knowing Bounds or Limits

This "slice" of conversation came out of "a chat" with a small group of students in 1988. J. was a very vocal student whose drama in the examples he provided was at times humorous. He was very emphatic about knowing when to stop piling on insults on someone.

D: When you blagging on people that is like old talk.

S: Some people call it picong.

J: That is harrassment to somebody. You can get somebody annoyed...like if they pass here: "Ay! Whey it is?" And you calling out: "Ay! Move your big head, nah boy!..." "You see you, don't tell me nothing" (in a tone of mock annoyance) "Ay! You little gyurl (continuing the example), you broad mouth ..."
You aint purposely violating the person.
You ain't getting the person ignorant or vex.

L: Some people take it very serious.

J: Most times when you blagging on people they does get vex. Because I see a fella was kicksin" on one...he take up a fork and run back out the

road and say: "I will chook you!" (Laughter and confused talk.)
...and you will do something real out of the way that they don't like and the moment you hear the person say: "Watch, I don't like that" (emphatic). You supposed to know it is time to stop. So you does have to know the limits...ignorant and vexation falling in the same category.

R: Polite means when I talk good to you, you talk back good to me.

J. and L. were not "problem" readers. They came to the reading room on afternoons only to read magazines and to chat.

It appears that "knowing bounds or limits" is a very important category in the verbal life of school and community and could have implications for language use in the classroom and for interaction with text.

And so categories for talk were initially derived from small groups like this one and later ratified or "validated" by other groups of students and adults.

Table 2. Student Talk Spectrum

"Polite" (positive)		"Ignorant" negative
Old talk	Old talk	Old talk
Sweet talk	Robber talk	Rum talk
Boasting/Brag	Cracking joke/picong	Back chat/answer back
Good talk—getting advice from adults	Mamaguy	Cuss
Fatigue/picong/tease	Hot talk	Argument
	Rude talk	Quarrel
		Mauvais langue/bad talk/gossip
		Fat talk
		Slack talk/rude talk

Note: Slack talk is rude, "vicey talk."

The types of talk in the middle column could have both polite and ignorant uses. More Creole than Standard English speech is used with these speech acts, especially those in the "ignorant" category. Old talk then appears to be the main event in which a number of acts can be played out.

Students also saw the positives of "old talk" in this way:

- Boys as well as girls take part

- You can "get important facts if you old talk with some adults

- Mainly Creole speech is used

- One can talk on any topic depending on the environment.

- One gets a free feeling and feels that (one) can relate to the other person.

Old Talk As Speech Event: Views From Teachers

T#1: You sit down to old talk...in years gone by...is village talk. There wasn't any TV, no radio, people sit on steps where they told all the stories, the legends, so people could discuss. They sitting and relating (narrating) to children...When someone say: "Ay, I have a old talk for you," it could be a very personal piece of gossip.

T#2: It come from the folk. It is having a common ground, shared interests and a way of socializing.

T#3: [an English Language teacher] *It has all kinds of talk (in old talk):*

- *it mustn't be stale*
- *relating (narration in a sequence)*
- *with piling on of detail (embedding)*
- *argument (loud discussion) with several speakers*
- *violation can occur—one has to know limits with picong, fatigue, cracking joke*

T#2: It could go too far, but humour is a leveller right through for a good belly laugh. It could go too far. You must respect the other person's boundaries.

Other Points

- people are very tone sensitive

- open participation, sometimes closed, usually there is a leader

- could be serious talk, bringing up issues fundamental to life

- unofficial forum

- participation depends on social class, gender and race

- generally occurs in Creole speech with some code-switching
- level of sophistication of talk depends on the education of the participants
- it could get rough with undesirable language and bitter words
- for young males it is a testing ground
- it could occur in many locations—school, rum shop, party, taxi
- the atmosphere is one of spontaneity, relaxation, informality, catharsis
- topics for old talk could be anything at all
- word play and teasing could lead to violence if handled badly
- bragging—a male style

- could also have singing, chanting, breaking out in song, drumming on tables and chairs, bottle and spoon
- many teachers use old talk styles in the classroom
  - to help students "come to grips" with concepts
  - must do it in Creole, can't do it in Standard (emphatic)
  - some people can't old talk, not everybody can do it

These views helped to clarify some of the student categories. That teachers use old talk styles in the classroom for explanation and humour made the possibility of devising a scheme for LEA using the talk categories seem real, in light of the theoretical frames of language and LEA that were discussed in an earlier section of this paper.

Table 3. Suggested Alternative LEA Scheme

**The aim is to have students discuss and write their own material with the teacher's help, based on the following kinds of talk below. There will be much discussion in both TCE and SE. Their compositions can serve as reading material for the group. Dialogue parts can be written in TCE. Discussion about the type of talk can range from how it occurs, to events, stories and poems, skits, and videos based on them. Students can go on to examine other genres, for example, advertisements, letters to the editor, comics, sports stories, movies, and expository and personal pieces. After composing, have students read their pieces aloud as in Readers' theatre. The mode of participation should be free, yet with some orderly turn-taking in the giving of responses or comments. Students should be relaxed and feel confident in participating.

Type of Talk	Strategy for Reading and Writing	Activity
*Relating/narrating	Narrating, sequencing, embedding, punning	*Discussion, storytelling, drama, Group composing of text
		In TSE and SE –
	Arbitrating, knowing bounds	*reading and writing

**Can also include, with teacher's guidance in story, in drama:
*sweet talk, mamaguy, fatigue or picong. Extend the experience with use of stories from newspaper sources and composing poems or song lyrics
**It is permissible to teach much-needed reading skills, especially word recognition and decoding, language structure, vocabulary development

Type of Talk	Strategy for Reading and Writing	Activity
*Argument	*Narrating, sequencing, analysing *knowing bounds, role-play, the challenge, imitating, improvising, explaining, summarizing and other appropriate strategies, e.g., debate	Serious discussion to allow students to fall into appropriate argument-type roles as opposed to quarrelsome roles

*Can also include sequences of bragging/boasting in dramatic play with robber talk (traditional), chanting and poetry, and song lyrics. Extend the experience using art, other reading material. Teach needed reading "skills" and language structures

Type of Talk	Strategy for Reading and Writing	Activity
*Good Talk vs. mauvais langue/gossip	*evaluating, negotiating, sequencing, embedding, the challenge, role play, imitating, improvising, explaining, analysing	Drama, discussion, composing use of other genres

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*Same as above—teach language structure, decoding, comprehension and vocabulary where needed. Extend the experience through art, writing, and the discussion of movies
_____

*Teachers may adapt the scheme and devise exercises using other kinds of talk judiciously, as well as written text and music to stimulate student interest. Using the scheme requires a more "liberal" use and formatting of classroom space. To be more accurate, a scheme of this kind requires research into the structure of Creole discourse and much experimentation in developing activities for classroom use.

References

Collins, J. (2006). Differential instruction in reading groups. In J. Cook-Gumperz (Ed.), *The social construction of literacy* (2nd ed.; pp. 138–164). New York: Cambridge University Press.

Cook-Gumperz, J. (Ed.). (2006). *The social construction of literacy* (2nd ed.). New York: Cambridge University Press.

Craig, D. (1976). Bidialectal education: Creole and standard in the West Indies. *International Journal of the Sociology of Language, 8*, 93–134.

Craig, D. (1999). *Teaching language and literacy: Policies and procedures for vernacular situations*. Georgetown, Guyana: Education and Development Services.

Erickson, F. (1986). Qualitative methods. In M. C. Wittrock (Ed.), *Handbook on research in teaching* (pp. 119–161). New York: Macmillan.

Ferriera, J. S. (1980). *The sociolinguistic situation of Trinidad and Tobago*. Retrieved April 1, 2007, from http://www.unb.br/il/liv/crioul/textos/ferriera.htm.

Gee, J. P. (1996). *Social linguistics and literacies: Ideology in discourses*. New York: Taylor and Francis.

Hall, M. A. (1981). *Teaching reading as a language experience*. Columbus, OH: Merrill.

Herskovits, M. J., & Herskovits, F. S. (1947). *Trinidad village*. New York: Alfred Knopf.

Hymes, D. (1972). Introduction. In C. B. Cazden, V. P. John, & D. Hymes (Eds.), *Functions of language in the classroom* (pp. xi–lvii). New York: Teachers College Press.

Hymes, D. (1976). *Foundations of sociolinguistics: An ethnographic approach*. Philadelphia, PA: University of Pennsylvania Press.

James, W. (2003a, October 19). *Teaching English as a second language Pt I*. Retrieved July 16, 2006, from http://trinicenter.com/winford/2003/oct/192003.htm

James, W. (2003b, October 26). *Teaching English as a second language Pt II*. Retrieved July 16, 2006, from http://trinicenter.com/winford/2003/Oct/262003.htm

Joseph, B. (1978). *A study of the relationships between teacher ways of speaking and student responses*. Unpublished doctoral dissertation, University of Illinois, Urbana.

Labov, W. (n.d.). Can reading failure be reversed? A linguistic approach to the question. Retrieved April 1, 2007, from http://www.ling.upenn.edu/phono_atlas/RFR.html

O'Donnell, M. P. (1975). *Teaching reading to the untaught*. New York: Multi Media Education.

Robertson, I. (1996). Language education policy [1]: Towards a rational approach for Caribbean states. In Christie, P. (Ed.), *Caribbean language issues: Old and new* (pp. 112–119). Mona, Jamaica: The Press University of the West Indies.

Rohlehr, G. (1990). *Calypso and society in pre-Independence Trinidad*. Port-of-Spain, Trinidad: Author.

Saville-Troike, M. (2003). *The ethnography of communication: An introduction*. New York: Blackwell.

Schwab, I., & Stone, J. (1985). *Language, writing and pubishing: Working with Afro-Caribbean students*. London: Hackney Reading Centre.

The Use of Mass Media as a Didactic Strategy in the Teaching of English as a Foreign Language -Music and Songs-

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Abstract. This project was inspired by the influence of the mass media on society today. The main objective was to introduce a meaningful and communicative environment in the classroom by applying authentic material from the mass media to the teaching of English to fifth grade students in the city of Bogotá, Colombia. The use of mass media allows teachers to expose students to authentic English instead of teaching from traditional textbooks that may be mundane from the students' point of view. Music and songs facilitated work on five different aspects: vocabulary, grammar, listening, speaking, pronunciation, and communication. The material selected gave the students patterns and tools to communicate in English.

Introduction

The use of mass media as a didactic strategy in the teaching of English through music and songs emerged from the need to introduce a communicative environment in a primary school in the city of Bogotá, Colombia. Additionally, there was a need to maximize the influence of the mass media and the presence of the English language in the different media forms.

The main hypotheses of this project were, firstly, that everyone is influenced by the mass media and, secondly, although the material designed for pedagogical purposes is a good resource for teaching, the material taken from the mass media can be more widely exploited.

The following research question was posed:

How can the mass media be utilized to offer didactic and meaningful strategies in the teaching of English?

Therefore, the main objective was to introduce a meaningful and communicative environment in the classroom by applying authentic material derived from the mass media in the teaching of English to fifth grade students at Prado Veraniego Government School in the city of Bogotá.

Why Use the Mass Media in theTeaching of English as a Foreign Language in Bogotá? (Context)

The teaching of English in the city of Bogotá has fallen into neglect in government elementary and secondary schools. The English language as a subject has been reduced to restrictive and meaningless environments that offer no opportunity for language maturity to both teachers and students.

The curriculum in Colombia focuses mainly on mathematics and Spanish, which are undeniably important areas for the learning process at an early stage. However, the emphasis on these two subject areas restricts the exploration of other subjects that can be of equal importance and attractiveness to students and teachers. Subjects such as the arts, sports, and English are left behind.

There are various consequences as a result of this. The teachers of these subjects have fewer opportunities for in-depth coverage of the programme due to time constraints. In addition, as these subjects are less important they are not given adequate funding in order to design different activities that foster meaningful learning, which limits teachers' creativity. Therefore, students who are more interested in these other subjects are forced to learn only basic concepts.

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Thus, the teaching of English in elementary schools is considered only as the *transmission* of some very basic content that results in students learning vocabulary by rote, without any useful communicative context. Consequently, a fifth-grader who is finishing his/her elementary education will be able to recite, with some difficulty, vocabulary related to: numbers, colours, animals, fruits, professions, body parts, clothes, and family. This would mean that at the end of primary school, one is likely to find students whose knowledge of English is reduced to a few words that make them incapable of any meaningful expression, since these words were learnt by drawing, repeating, copying, filling in gaps, or singing children songs that were designed with special pedagogical purposes. This unauthentic material is created because students are considered as children who are not in contact with the real, globalized world in which the English language is something more than the song that we had to listen to when we first studied English: "*pollito* chicken, *gallina* hen, *lápiz* pencil," and so on.

In the present global context in which English seems to be the preferred language of communication, it is possible to find its use everywhere as a result of the mass media. Whenever one turns on either the television or the radio one can watch and listen to music, video clips, movies, news, advertisements, sports, documentaries, and cartoons in English. Therefore, the main focus of this project is the use of the mass media in the teaching of English so that students can be exposed to a real language that is beyond the traditional textbooks, and one that is easily accessible to everyone via the mass media.

Why do educators not take advantage of these resources in order to get students to experience the English language at an early age? Instead of reducing the teaching strategies to the simple and mundane contact with the vocabulary, introducing English through unreal situations or no situation at all, and making the learning experience of the language a tough one, why not show students the real English they are in touch with through the mass media?

Beginning from the last premise, we see the mass media as a useful, effective, and meaningful solution that can be introduced to classrooms. The mass media can also be applied as a didactic strategy in the teaching of English as a foreign language. Furthermore, it can be a strategy to foster autonomous learning for students to practise while watching television, listening to the radio, or surfing on the Internet.

Our society and probably the majority of societies in the world are completely immersed in the mass media. Most of the inhabitants of the world have some interaction with the mass media, either in the form of television, radio, newspapers, publicity, Internet, films, or other forms. The mass media have been playing an important role in our lives since the second half of the last century. It seems that as time goes on it becomes much stronger and more powerful in influencing everyone's life.

The mass media have entered almost every home all over the world, no matter the circumstances, social conditions, geographical location, and beliefs. Strong evidence of their influence is seen in the determination of the level of development of any community, in that one of the criteria used in compiling those statistics takes into account the number of television sets per mile. Through the mass media, people have come into contact with the great variety of cultures of the world. Apparently, the mass media are the extensions for each of our senses, which allow us to see, hear, and feel further than we actually can.

In the city of Bogotá, where this project was done, most people are heavily influenced by the mass media. The city's inhabitants are always surrounded by the images of the television, the sound and music of the radio, and, lately, the click of the Internet. Soap operas, TV news, reality shows, video clips, films, and all types of radio stations are members of their families and accompany them during their routines. For instance, at any meeting, cafeteria, mall, or wherever people meet to talk, at least one of their topics of discussion must be related to something they watched or listen to either on the TV or the radio. There is no distinction by social status, sex, or age, since everyone in one way or another is always discussing what is portrayed by the mass media.

In light of the above, the question to be answered is: Why does the education system not take advantage of the material provided by the mass media to foster critical thinking among students and teach them how to interpret

everything they listen to and watch? Are children not left to grow up in front of the television sets, for example, because their parents must work? Instead of blaming the mass media for the ills of society why do we not admit that the mass media does not educate as it did before? And because of this, the mission of education now is to teach how to read between the lines and the images we consume every day.

With reference to the teaching of English as a foreign language, the mass media can be readily used to show students that although in Colombia English is not spoken, it does exist elsewhere, and it is useful to learn it. Unfortunately, the materials and resources that English teachers in most government schools in Bogotá have are either limited or non-existent. These resources include the whiteboard, some markers, and an eraser. Some institutions provide textbooks at the secondary level, but this is not always the case at the primary level. As can be seen, these materials do not allow teachers to teach English meaningfully, but in a very artificial manner that students do not enjoy.

A school can be described as an artificial environment where students go to learn formal knowledge. It is artificial for the simple reason that students learn more outside the school than inside it. In most cases, schools take for granted the knowledge students learn outside. The real learning environment is outside the classroom with their friends, their families and, of course, the mass media.

Thus, when we take into account what students have learnt from their experience and link this to classroom activities, this can be considered as meaningful learning, as opposed to the use of textbooks that provide drills and exercises in structures, vocabulary, and all the skills in a very systematic way. However, some students find these textbooks mundane. It is undeniable that there are excellent books that have modern teaching approaches but, in some cases, these textbooks portray the English language as being abstract rather than real. Consequently, the learning process is not meaningful. This can be considered as one of the reasons for Colombian high school graduates being unable to correctly use even the verb "to be."

Literature Review

Five main theories were chosen to answer the question that directed this project and in order to accomplish the proposed objectives. The approach of different theories could support the different stages of the project very well: planning, application, and interpretation. The theories were studied according to the needs of the project and their relevance to the population and the topic:

1. The mass media

2. Communicative approach in the teaching of languages

3. Meaningful learning

4. Education and the mass media

5. The importance of music and songs in language learning

The following is a brief review of each theory and its relation to the project.

Mass Media

The mass media play an active role in every society around the world. This has influenced lifestyles, ways of behaving, and interaction among people as suggested by Gilles Lipovetsky (2003), who sees the mass media as important and active participants of our postmodern society:

> Newspapers, the radio, press and television exercise the power to homogenize people's likes and attitudes towards different things. Bestsellers, mega hits, celebrity idolatry, fashion obsession… and many other phenomena demonstrate the capacity of mass media to create a great scale of emotional similarity among people. (p. 101)

As can be seen, the mass media is a daily reality in which every one participates. At present, people's personalities and lives are modified by the mass media.

Communicative Approach

The first thing one should understand is the concept of communication. To communicate is to be able to interact with others and interchange ideas, concepts, emotions, and so on. Everything that we produce when speaking is the result of our interaction with the society and the culture in which we are immersed. That can also be considered discourse.

Luis Alfonso Ramírez (2004) states that:

> Discourse is the result of an act. Discourse production is an act of interpretation conditioned by some necessities that justify the action. One writes, speaks, reads or listens for a particular interest. Writing a letter, for example, is the result of the need to give an opinion or inform about something others do not know. (p. 4)

The communicative approach started in the 1970s and later on gained widespread popularity. The communicative teaching of languages stresses the importance of the use of language as a basic tool of communication by means of interaction. The main goal of this approach is the development of communicative competence.

Meaningful Learning

This model was created by psychologist David Ausubel (1983). His theory contrasts rote learning with meaningful learning. It establishes that to learn meaningfully, students should relate their new knowledge to their previous knowledge. What this implies is that teachers should maximize the experiences that students have as active members of the society so that their teaching should be based on these experiences, instead of treating students as individuals whose brains are empty.

Education and the Mass Media

Lipovetsky (2003) notes that the "mass media, and particularly television, are not meant to educate and make people think critically. They are meant to entertain and attract the highest audiences."(p. 106). Most people find in television, and mass media in general, the best scapegoat for everything negative that happens and also to justify the rebellious behaviour of young people. However, it seems that education is not taking any action to teach people how to interact with the mass media:

> It is in our bodies and faces, in the way we speak, in what we eat, in what we sing, where the mass culture appears every time.… At present, the mass media, fashion and the group of friends become the strongest educative systems.… The issue is to teach how to read not only what people see, but also the role they have as receptors of the messages they see and hear. (Quiroz, 2001, p. 50)

As the previous quotations show, society is participating in mass culture where everyone is affected. However, the problem that arises is how to control this mass culture and the active part that young people play in it. The solution that Maria Teresa Quiroz (2001) proposes is to teach the youth how to read what they consume. At this point, education plays the most important role.

The Importance of Music and Songs in Language Learning

Murphey (1995) notes that many persons have been amazed at how quick students are at learning songs, and that it is a common experience for people to forget nearly everything they learn in another language except the few songs they might have learnt. He further notes that, for a variety of reasons, songs stick in our minds and become part of us, and lend themselves easily to exploitation in the classroom.

Music is a part of everyone's life and is present everywhere. It combines several factors that make it a useful resource when learning, such as the different emotional effects it produces depending on the rhythm and message, the relaxation it inspires, and the chemical effect it produces in people's brains, among others.

Instruments and Type of Research

This project was done in 2005. During the first semester, the aim was to collect data by means of observations and a survey. Based on the results, new strategies for the use of the mass media were

designed, implemented, and executed in lesson planning during the second semester.

The Survey

This was the first instrument used to identify and define the problem. It was necessary to use it to confirm the initial hypothesis: mass media has a wide sphere of influence. The survey asked students about their interaction with the mass media and their consequent likes and dislikes. It was useful to see what kind of contact students had with the mass media, and also to find out what they were familiar with in order to source materials from those resources to design the strategies.

Journal Writing

This was the other instrument used that was consistent with the type of project being done: qualitative with two main methods—participant-observation and ethnography. The journals provided the opportunity to describe the main events that happened in every class while the project took place, and to record and determine the progress and results of the application of the strategies as well as the reactions of the participants with respect to these. The journals also described the achievements and failures the project had, along with some observations and analysis.

Qualitative Social Science Research Methodology

Since the project was done at a school, its main goal was to apply some strategies to improve the teaching of English. Qualitative social research was the best way to collect the needed data, taking into account that the observer was directly involved in the process and was an active part of the process. "Qualitative research has two unique features: (a) the researcher is the means through which the study is conducted, and (b) the purpose is to learn about some facet of the social world" (Rossman & Rallis, 2003, p. 4).

Participant-Observation

"Classroom observational studies are one example often found in education. Through observation, the researcher learns about actions and infers the meanings those actions have for the participants" (Rossman & Rallis, 2003, p. 195).

Ethnography

"Central to ethnographic work is the concept of culture….Culture captures the beliefs and values shared by members of a group that guide their actions and their understandings of those actions. Ethnographers often focus on the face-to-face interactions of member of a cultural group. They are interested in how interactions shape meaning in particular organizational settings." (Rossman & Rallis, 2003, p. 95).

Analysis of Data

The data analysis was based on a chart that included the following information:

Data	Findings	Implications/ Recommendations	Theory
This is the space to place the actual journals with detailed information	This is the space to name the different findings	This is the space to write any recommendation or implication	This space is to relate the findings with a theory from the literature review

Findings

Although many activities were planned, time constraints did not allow the completion of the designed programme. Nonetheless, one main sample can describe the maximization of the use of mass media. It was the use of the song *"I know a place,"* by the Jamaican singer Bob Marley.

After analysing the collected data for 10 journals the findings were as follows:

- The use of mass media facilitates the development of communicative skills

- The use of mass media fosters meaningful learning

- The use of mass media is a pleasant activity for students

The Use of Mass Media Facilitates the Development of Communicative Skills

The use of the song allowed exploration of six different aspects: vocabulary, grammar, pronunciation, listening, speaking, and communication.

Vocabulary and semantics. The project was designed for fifth grade students between the ages of 9- and 11-years-old at the beginner level in the learning of English. At this stage, the acquisition of vocabulary is important, but for most teachers it seems to be the only thing to teach. The exposure to the song allowed the learning of verbs, nouns, subjects, and adjectives that are usually taught by repetition. But in this case, the song facilitated a context to understand the vocabulary as opposed to the mundane learning of numbers or fruits to which students are accustomed.

Grammar. The different lexical categories mentioned above allowed instruction on the functions that each has in a sentence. But the explanation of the categories was delivered in a way that students could relate their new knowledge with the previous one. Grammar was taught but not explicitly.

Pronunciation. The song itself, the rhythm, its lyrics, and previous knowledge of the song encouraged students to sing it. Students practised pronunciation by trying to imitate the sound of a native speaker in a more spontaneous situation. In addition, the task was made easier as they were motivated by the song. To some extent, students forgot that they were in an academic environment as compared to the traditional activity of repetition proposed by the cassettes included in the textbooks.

Listening. This was an initial listening exercise for beginners, which required the recognition and discrimination of sounds in the English language, rather than a run-of-the-mill listening comprehension exercise. This exercise showed the authenticity of the language as opposed to the textbook songs for children. Although those songs are appreciated, they do not really recognize the immersion of the students in the real world. In other words, they perceive the target audience as one that does not know real music in English.

Speaking. As previously mentioned in the grammar section, students were exposed to different lexical categories, which afterwards allowed them to express communicative functions in the target language orally.

Communication. This is the main element to discuss. When referring to the collective use of skills mentioned, this can be considered as communication to some extent. However, if one thinks of each skill in an isolated manner the result will not be considered as communication. In other words, teachers can teach either vocabulary or grammar, but that will not guarantee that students will be able to express any idea in the target language. Instead, students might have very good linguistic competence but not communicative competence. The use of the song allowed the integration of all the skills to work on the language as a whole—as communication. At the end of the unit, based on fragments of the song, students were able to express *knowledge* and *needs* given by structures such as, *I know…*, and *everybody needs…*. They learnt how to use and distinguish the verb "*there is/there are.*" They also learnt the addition of the suffix 's' to verbs that are used in the third person singular in the present tense.

Also, students were able to construct sentences that combined those structures with their previous knowledge, thereby enabling them to express their own needs and knowledge, and to describe their own environment by the use of "*there is*" and "*there are.*"

If the results shown above are compared with theory, one will be able to see that these findings prove the development of communicative competence. As the communicative approach states, "one of the most characteristic features of communicative language teaching is that it pays systematic attention to functional as well as structural aspects of language" (Littlewood, 1981, p. 1). So the strategies did achieve most of the features of the communicative approach such as:

- Language learning is learning to communicate

- Communicative functions are the main aspect and they are not normally memorized

- Any device that helps the learners is accepted—with variations according to age, interests, and so on (mass media)

- Comprehensible pronunciation is sought

The Use of Mass Media Fosters Meaningful Learning

Four main points support the conclusion that the use of mass media fosters meaningful learning:

1. ***Students are in permanent interaction with the mass media***. This interaction allows the maximization of the use of material provided by mass media. So that students will always be open to receive any kind of media manifestation since they are familiar with them. A song, a television show, a poster, or a simple picture will be attractive for them as that constitutes part of their routines.

   What teachers should pay special attention to is that not everything is attractive for students. So it is advisable to be very careful when choosing any kind of material. The reason for this is that if students are not familiar at all with the material selected, the activity will not be meaningful.

2. ***The more previous information students have, the more interest they feel.*** This point is directly related to the previous one. It has to do with the fact that students knew who Bob Marley was before class. This means that the familiarity that students have with the material determines the success or failure of the activity. Also, an interesting point was that students were aware of the existence of someone who died more than two decades ago. This awareness is given by the mass media and the icons they show and create.

3. ***Music is always meaningful.*** As Murphey (1995) states, pop music is a universal language that does not have any specific audience and can be listened to everywhere. This suggestion makes the teaching of English

through songs very easy since the pop music industry is practically boundless and experiences constant enhancement. As well, music is a part of every culture, making it a vehicle for varied interaction.

Additionally, to study the English language by means of songs makes students change their perception of the English language. They become more enthusiastic because they see the target language as a way to get to know and understand the songs that they can listen to on the radio or view on television.

4. ***The implementation of mass media should foster critical thinking***. The use of mass media is not only an enjoyable activity for students but also a means to foster critical thinking. Teachers must be able to make students reflect on what they see. It is not only the information that can be extracted from the mass media, but also the analysis of that information. Parents and teachers are responsible for controlling what children see. This control should not be by means of hiding the bad things that children are not supposed to view, but parental control should go beyond to make children critical consumers and not only passive receptors. The mass media provides interesting subjects for discourse analysis study. This is something still pending on the agenda for education in third world countries since children spend more time viewing television than talking and playing with their parents due to time constraints.

The critical analysis that the song allowed was the existence of the English language in countries apart from the United States (US), the United Kingdom (UK), Canada, and Australia. The stereotype makes people think that the English language is present only in those countries. The fact that the song was by a Jamaican singer made the class reflect on the presence of the English language in the Caribbean and Africa as a result of the colonization process, and also to see the connection that if they speak Spanish it is because Colombia went through the same process.

In short, it can be affirmed that the continuous interaction students have with the

mass media makes the implementation of media tasks much easier, and also are very well appreciated by the students. In addition, it facilitates the exploitation of activities that motivate students.

The Use of Mass Media is a Pleasant Activity for Students

This point demonstrates the change of attitude that students manifested towards the class. This change was the result of activities that did not demand rote learning but instead made students more confident about participation in class since they connected previous knowledge with the new knowledge they acquired in the target language. This confidence gave them the chance to express themselves rather that repeating meaningless information.

Special attention is suggested for discipline reasons. Activities that involve more physical activity such as singing, dancing, dramatizing, among others, can provoke emotions among the students that can get out of control. In other words, students might enjoy the activity so much that they can forget they are in an academic environment.

However, this change of environment helps change the idea of English as abstract grammar. Instead, students perceive it as a reality that they live with since they can interact with those songs and that material, either by watching television or listening to the radio.

Implications

Although the advantages of using mass media in the teaching of languages is undeniable, there are some aspects to consider when working with them:

• **Planning.** The maximization of resources can be endless once a good plan is prepared beforehand. This has to do with choice of material. The success or failure of a class depends on this. It might be that the material has great content that can be mistreated because of a lack of preparation. It also can be that the chosen material is not meaningful and students find it mundane. Planning also has to be *systematic* and organized. It might be that a large number of activities are prepared, but there is no connection among them. The

objectives have to be clear; otherwise there might be the feeling of doing something that has no direction. The plan also has to answer five basic questions: *what*, *how*, *when*, *where*, *for whom*, and *why*.

• **Level of Complexity.** The language of the material should to be carefully revised to fulfil demands at the various levels. Clear distinctions should be made among beginners, intermediate, upper intermediate, and advanced levels.

• **Content**. The content should be carefully analysed, taking into account the kind of audience.

• **Age**. Not all material is suitable and attractive for all ages.

• **Quality**. The quality of the resource must be the best. If teachers record something from the television or the radio, or download something from the Internet, the quality must be the best.

• **Message**. Mass media always convey various messages depending on the audience. Songs, movies, news, reports, and articles are meant to do so. In this sense, teachers must pay attention to this sort of message because students are not just learning about the language but they are also learning *through* the language and interpreting the messages. This will also depend on the objectives the teacher has.

• **Mass Media and the Textbook.** One disadvantage of the use of mass media might be that it is *time-consuming*, in terms of preparation as well as implementation. It is recommended that teachers maximize the use of all the resources they have. Therefore, interchangeable use is suggested.

Conclusion

The conclusion of this paper is the answer to the research question established at the beginning:

How can the mass media be utilized to offer didactic and meaningful strategies in the teaching of English?

The alternatives are endless. Every form of the mass media can be used. This project dealt only with the use of music and songs. However, forms such as television, press, newspapers, Internet, advertisements, and the radio can be widely

exploited depending on the needs of the teacher and the population to whom the material will be applied. This demands a lot of responsibility from the teacher, who is the one in charge of choosing and adapting the material.

This material can be used as a model to teach the four communicative skills. It can be adapted to teach grammar, writing, speaking, and listening. Furthermore, the best advantage is the integration of skills that can lead to the goal of communication. For example, a movie, which by itself trains the ear (listening), can provoke a discussion (speaking), can provide essay topics (writing), and promote the reading of criticism made on the movie.

Also, people identify very easily with the mass media since they constitute part of their lives. This aspect can be exploited to teach meaningfully and communicatively.

References

Ausubel, D., Novak, J., Hanesian, H. (1983). *Psicología educativa*: *Un punto de vista cognoscitivo* (2nd ed.). México: Ed. TRILLAS.

Lipovetsky, G. (2003). *Metamorfosis de la cultura liberal*. Barcelona, Spain: Ed. Anagrama.

Littlewood, W. (1981). *Communicative language teaching*. Cambridge: Cambridge University Press.

Murphey, T. (1995). *Music and song*. New York: Oxford University Press.

Quiroz, M. T. (2003). *Aprendizaje y comunicación en el siglo XXI*. Cali, Colombia: Ed. Norma.

Ramirez Peña, L. A. (2004). *Texto y discurso*. Medellín, Colombia: Tercer Coloquio Nacional de Estudios del Discurso.

Rossman, G., & Rallis, S. (2003). *Learning in the field: An introduction to qualitative research*. Thousand Oaks, CA: Sage.

Information and Communications Technology Initiatives in Secondary Schools in Trinidad and Tobago

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Abstract. The education system of Trinidad and Tobago must keep step with international advancements in Information and Communications Technology (ICT). The knowledge-based, technology-driven global environment demands that our education system produce citizens with the ICT skills and competencies to successfully deal with the imperatives of globalization. In order to meet this challenge, teachers and administrative staff must be adequately trained and be disposed to the incorporation of ICT in their delivery of instruction and in the automation of administrative tasks. This paper gives an historical account and a critical analysis of ICT initiatives in the curriculum of secondary schools in Trinidad and Tobago. The paper discusses the findings of a study that investigated the proclivity of teachers and administrative staff of an urban secondary school to the implementation of computer-based technology solutions. The findings showed that many educators are willing to utilize ICT, but most are not trained to use the technology. As a result, costly equipment supplied to schools is left unused or underutilized.

Introduction

Our very survival as a people and as a nation depends on how we face the challenges of life in this global village where we must compete for space in the international market place; in a global economy that is knowledge-based and technologically-driven, particularly by the information and communication technologies. (Trinidad and Tobago. Ministry of Education [MOE], 2002)

The imperatives of globalization have mandated that new and innovative changes be made to the curriculum in order to equip students with the information and communications technology (ICT) skills and competencies required to meet the challenges of today's technological world. Globalization—the process of interaction and integration among the peoples, economies, and governments of the world—is driven by international trade and investment and facilitated by the phenomenal advancements in information technology.

The size, intensity, velocity, and impact of global networks, flows, and interaction consistent with the revolution and expansion of ICT have forced countries to re-examine education's links with politics, the economy, society, and culture. Brunner (2001) postulates that "the establishment of a technology based on information and telecommunications systems creates new contexts in which individual's education will in the future take place" (p. 134).

Globalization has therefore brought new economic, political, social, and cultural imperatives that confront the educational community. The approach to education, and the delivery of instruction in particular, must now be reconceptualized if the curriculum is to prove meaningful in today's world. Nordgren (2002) contends that much of what we ask students to learn in this age of globalization is useless. If we are to provide students with knowledge that is meaningful, relevant, and essential for survival in this competitive global environment, ICT must be given greater significance in the curriculum and teachers must be trained to employ new methodologies that incorporate ICT in their delivery of instruction.

Students in secondary schools in Trinidad and Tobago are challenged to adjust to the new imperatives that accompany globalization. Within recent years, globalization has assumed an even closer reality with the creation of the Caribbean Single Market and Economy (CSME). Students in our secondary schools must be cognizant of the reality that virtually every career in today's job market demands some measure of computer-related proficiency. This paper, addresses state policy enunciation and implementation of

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information technology (IT) initiatives from the perspective of globalization. It is argued that while the state, through the Ministry of Education (MOE), and enterprises in the private sector have made significant disbursements of computers and related equipment to secondary schools, the lack of sustained and meaningful training and empowering of teachers to incorporate computer technologies into their methods of instruction delivery has denied students optimum benefits of the new technology.

In support of this claim, this paper discusses the findings of a study that investigated the proclivity of teachers and administrative staff of an urban secondary school to the implementation of computer-based information technology solutions; as well as their preparedness and disposition to effectively utilize computers and attendant peripherals in their delivery of instruction and in the automation of administrative tasks. This research was based on the premise of teachers' cognizance of the utility of the computer and the need for greater efficiency in the delivery of instruction, and in the management, storage, and retrieval of student data. This premise, however, had to be juxtaposed with the view that those who try to foster the use of (information) technology in schools are often guilty of hubris, starting from a premise that the value of the new approach urged is self-evident, and that teachers and administrators should naturally want to shift their ways radically to take advantage of the new.

The research identified the fears and concerns consistent with change, and revealed teachers' lack of preparedness to effectively make optimum use of computers and related devices in secondary schools.

The Technology Revolution

Globalization is accompanied by unprecedented technological revolution. Trinidad and Tobago, unfortunately, has failed to produce the required quantum of workers with the IT skills needed to gain employment in several local technology-based industries. Campbell and Nugent (2003) suggest that "what's required is a highly skilled working class to compete in the new arena shaped by globalization" (p. 20). They contend that our education system has effectively produced an "intelligentsia that does not have a scientific

understanding of the process of capitalistic globalization and the implications for the world in which they live" (p. 21).

At this pivotal juncture in the evolution of our educational system, as the reconceptualizing of the agenda for education is explored, one can concur with Brunner (2001), who recommends that schools should be re-engineered to survive in the multi-channel technological world. No longer is knowledge slow, limited, and stable, but it is constantly changing and renewed. He observes that the options for acquiring information are now almost limitless; the teacher no longer being the embodiment of all knowledge in the classroom. Brunner (2001) further envisages that educational establishments would increasingly cease to be the sole conduit through which new generations come in contact with knowledge and information; that role being increasingly assumed by the Internet, computerized networks, and the burgeoning knowledge industry. It is now widely argued that the real role of the teacher in an information-rich world is not just to provide information but to guide and encourage students wading through the deep waters of the information flood (O'Donnell, 1996). Educational planners must therefore be cognizant of these realities, and restructure the curriculum to include the new information frontiers such as the Internet, with its attendant protocols; local and wide area computerized networks; and telecommunications systems.

Introduction of Computers: An Outline History

It may be useful to reflect on the introduction of computers into the curriculum of schools in the Caribbean region at large. During the 1970s, many Caribbean countries were either saddled with foreign debt problems or were governed with a tight fiscal rein, mainly occasioned by interventions of the International Monetary Fund. Concurrent with this period, however, the developed world was taking cognizance of, and assiduously implementing, ICT in their education systems. In schools across North America, Japan, and Europe, students were being exposed to IT. Having missed the start of the race, schools in the Caribbean have been struggling to catch up with the developed world. Trinidad and Tobago's lethargy is evidenced by the fact that we have only

just finalized a draft policy for Information and Communications Technology in Education (MOE, 2007).

A Political Mandate

At a conference in Cyprus in 1984, Ministers of Education mandated the Commonwealth Secretariat to provide unbiased advice to assist member countries with the implementation of computers and IT in their education systems. Subsequent to this, the Secretariat, together with the Government of Alberta, Canada, convened a Pan-Commonwealth meeting of specialists, which was held in Edmonton in May 1986. Members from Britain, Canada, Cyprus, India, Kenya, Singapore, Barbados, and Trinidad and Tobago contributed towards a policy document that served as a template for the implementation of computers into the education system of Commonwealth schools.

Caribbean governments were challenged to make bold decisions in the area of IT, which, despite the substantial initial cost, would impact positively on the society in both the short and long term. The myopic viewed its implementation as a self-indulgent luxury. Others, however, were convinced that the introduction of IT into the curriculum was an essential step in the struggle to close the widening technology gap between the developed nations and the developing states in the Caribbean.

Private Sector Input

The imperatives of computerization and automation of private sector industries placed great demands on educational policy makers and curriculum planners to accelerate the introduction of computers into their education systems. Trinidad and Tobago, Cuba, and Jamaica stood out as being in most urgent need of computer-literate workers. The importation of skilled workers from developed countries was viewed as being counter-productive to the development of indigenous skilled human capital. The introduction of computers in schools, however, did not keep step with the implementation of computer technology in the private sector.

The literature alludes to the slow pace of computer technology implementation in the education sector, and compares the implementation of IT in businesses to that of schools. Although the use of information systems to immediately access accurate and comprehensive information has long been seen by the business sector as being critical to their success, schools have lagged behind in the implementation of IT solutions (Telem, 1993). D'Ignazio (1993) states emphatically that while businesses have been building electronic highways, education has been creating an electronic dirt road. Many reasons have been proffered for this tardiness. Some have suggested insufficient research as a probable cause. Messner (1999) argues that schools in general are reform-resistant institutions, and observes that many of them appear to be quite proud of this position.

The University of the West Indies

In 1970, the first attempt was made to integrate computers into the university's teaching/learning environment. This was pioneered in the Faculty of Engineering. Ten years later, in 1980, a full degree in Computer Science was offered in the Faculty of Natural Sciences. The university's Vice-Chancellor, Sir Allister McIntyre, addressing the Eric Williams Memorial Lecture in June 1988, stated that all these strides in microcomputer integration and usage were still "not good enough." He surmised that the region lacked sufficient skilled people in mathematics, computer science, and engineering and too few were being trained in these disciplines, especially in computer science. He added, "in particular, I feel that the aim should be to make every student computer literate. I should add to this the need to adopt a problem-solving approach in courses, and to provide students, wherever appropriate and feasible, with hands-on experience" (McIntyre says high tech important, 1988, p. 18)

An article in the November 27th, 1987 edition of the London Times displayed the headline "Computers to link islands' campuses." The article gave details of a gift of 35 microcomputers valued at J$935,000 (£95,000), which was donated by International Business Machines (IBM) to The University of the West Indies' (UWI) distance teaching project. The computers were to link campuses in Jamaica, Barbados, and Trinidad and Tobago, as well as extra-mural centres in Antigua,

Dominica, St. Lucia, and Grenada, via a leased telecommunications network. The distance learning project was conceived in 1984 by Senior Lecturer Dr. Noel Kalicharan. The gift of the microcomputers made the project's execution a reality.

In December 1996, UWI got its first dedicated line to the Internet. This was made possible from a US$50,000 donation from CONOCO Inc. Professor Gurmohan Kochhar, Dean of the Faculty of Engineering, stated that the funds would be used to open access to hundreds of engineering and other students of the UWI and would also go towards the purchase of additional computer systems.

Today, modern microcomputers running on high-speed intranets and local area networks (LANs) are used by the various campuses of UWI for teleconferencing, distance learning, Internet research, message services, and for telecollaboration among students.

NIHERST Pilot Project

In 1984, a pilot project for the introduction of computer science in secondary schools was launched by the National Institute of Higher Education, Research, Science and Technology (NIHERST), in association with the Ministry of Education and the School of Education, UWI, under a steering committee charged with the responsibility of overseeing all phases of the exercise. A curriculum committee was established to develop a curriculum for use by the pilot schools in keeping with the broad aims of the programme. Three reasons were cited for the introduction of computers into the education system of Trinidad and Tobago:

- To foster students' awareness of the nature and uses of computers in order that they could cope with, function in, and promote the advancement of technological societies
- To assist in some definitive way in the teaching/learning process
- To help with administrative tasks involving information flow, scheduling, and academic reporting

Fifteen secondary schools were invited to participate in the pilot project. This number was later increased to 30. Each school was allocated four Apple IIE computers, each with 64 MB RAM. Two teachers from each school were selected to undergo an intensive six-week course in computer literacy, with emphasis on programming and productivity tools.

The project was then handed over to the Ministry of Education, which, sadly, could not identify suitably qualified personnel to coordinate and supervise it. It was not until November 1985, that Dr. Brader Brathwaite was asked to coordinate the project.

Fatima College was one of the first secondary schools to fully incorporate computers into the teaching/learning environment. In September 1985, the school received a cheque for TT$45,000, which facilitated the purchase of a further 12 microcomputers. The Republic Bank-sponsored Computer Lab at the Mucurapo-based school was equipped with 26 Radio Shack TRS 80 computers. The Fatima College Computer Science Centre was used by students of St. Mary's College; St. Joseph's Convent, Port of Spain; Holy Name Convent, Port of Spain; and St. Francois Girls' College.

Edu-Link TT

In 1996, Royal Bank signed a memorandum of understanding with Industry Canada's SchoolNet to provide for the collaborative application of SchoolNet technology to Trinidad and Tobago. In April 1997, Edu-Link TT, an adaptation of the Canada-based SchoolNet, was launched at the Royal Bank Institute of Business and Technology (ROYTEC). The programme was coordinated by Mrs. Elphege Joseph, Executive Director of Royal Bank. The short-term goal of the programme was a pilot project involving 12 secondary schools in Trinidad and Tobago that were to be connected to Canada's SchoolNet. Pilot schools were to be partnered with Canadian schools in an exciting and innovative virtual community, affording new opportunities for reshaping the learning process.

Working groups, comprising teachers and students of the pilot schools, were trained by personnel from Industry Canada. Long-term objectives included the extension of Edu-Link TT to all schools in the country and the setting up of

local area networks (LANs) in each school with connections to the school's library and administration office. This was to coincide with the delivery of 364 computers to secondary schools, donated by Amoco Trinidad Oil Company, with additional funding to come from the private sector.

Edu-Link TT received accolades from the World Bank, which praised the initiative, lauding the fact that it was initiated by a private sector institution working with the Government to restructure and develop the education system in the country, with particular emphasis on the introduction of ICT. At the 'Global Knowledge 97' World Bank Conference, delegates from several African and Caribbean countries expressed interest in establishing similar programmes in their respective countries.

Edu-Link TT can be credited with coordinating the public/private sector National Steering Committee. In April 1997, this committee produced a vision statement for a national strategy for the implementation of Information and Communications Technology in Education, which stated that "by the year 2005, every citizen of Trinidad and Tobago will have the opportunity to develop to his or her full potential through access to education and training centres equipped with leading-edge information and communication technology" (*Royal Bank Customer News*, 1997). Members of the Steering Committee included officials from the MOE, IBM World Trade Corporation, Amoco Trinidad Oil Company, TSTT Limited, InterServ Limited, PCS Nitrogen Trinidad Company Limited, WOWNet, CableView Limited, and TV6.

The EDU-Link SchoolNet initiative, however, resulted in only limited success. The project never fully materialized nor fully achieved its objectives. The LANs promised were never installed and the stated objectives of collaboration and information sharing between local and Canadian schools never came to fruition.

Used Computers for Schools

The period 1990–2000 saw a proliferation of used computers being given to secondary schools. As the technology evolved at a rapid rate, companies considered it appropriate and civic-minded to donate their used and sometimes outmoded computers and printers to schools. Several schools, in dire need of computer equipment, and tired of waiting on the MOE, wrote to private sector enterprises asking for assistance in acquiring computers. They took the position that a used or refurbished computer was better than no computer at all. While many of these computers were in good order and put to use in some schools, many other secondary schools became the recipients of redundant and obsolete computer hardware. Other schools, determined to establish and equip their computer labs so as to ensure that their charges did not leave the school without some measure of IT exposure, employed several innovative fund-raising ventures in order to accomplish their stated objective.

Government/Energy Sector Agreements

The impetus for the introduction of computers into local educational institutions on a relatively large scale came as a result of agreements between the Government and the energy sector. Production Sharing Contracts between the state and oil and gas companies bidding for exploration contracts in the offshore fields were negotiated with each exploration and production contract. The agreements included provision for the Government to receive a technical assistance/equipment bonus, which was designated towards the purchase of computer equipment for secondary schools. Credit must be given to the Curriculum Officer (Mathematics and Computer Science), Mr. Ian Furlonge, who represented the MOE in these negotiations. Some of the major procurements from such agreements include the following:

- In 1997, a disbursement of 240 computers and printers was made to schools as an outcome of the production sharing agreement between the Amoco Trinidad Oil Company, Trinidad Gas BV, Repsol Exploration SA, and the Government. Each of 20 selected secondary schools (including denominational schools) received 12 IBM computers, each with Pentium processors and 16 MB RAM. Each of these schools also received two dot matrix printers.

- In July 1997, a production sharing contract bonus agreement between the Government; the Dutch company, Shell; and the Italian

company, Agrip determined that the companies provide 500 personal computers for primary and secondary schools. These computers were disbursed to selected schools throughout the country. These systems boasted of 8 GB hard drives and 64 MB RAM.

- In June 1998, the Inter-American Development Bank (IDB) donated 44 computers to secondary schools. Each of 22 schools received two computers each. These computers had a net total value of TT$440,000.

- In January 1999, at a ceremony at the Rudranath Capildeo Learning Resource Centre, the Prime Minister delivered 60 computers to 12 secondary schools. These systems were acquired as a result of the Production Sharing Contract signed with CONOCO Oil Company.

- In July, 1999, Citibank (Trinidad & Tobago) Limited donated 27 computers to schools. This followed their donation of 19 computers to schools in 1998. Each selected school received 1 computer system.

Since 2000, many new secondary schools constructed under the Secondary Education Modernization Programme (SEMP) have been commissioned and appointed with computer labs, and equipped with networked computers and other equipment such as multimedia projectors. The networking and maintenance of these systems left much to be desired, and much of the equipment is either underutilized or not used at all.

Funding for the purchase of computers and related equipment was also sourced through the schools' Strategic Plan initiative. Many schools submitted their strategic plans, which prioritized ICT in the school's curriculum. These schools were able to draw down on the MOE's allocation of several thousands of dollars, which was utilized in the purchase of computer systems and peripherals to be used by several disciplines, and by both students and teachers in the schools.

SEMP Fujitsu Initiative

In April 2007, the MOE, through SEMP, finalized and signed a contract with Fujitsu Transaction Solutions Limited, the first phase of which involved the supply, installation, and maintenance of computers, servers, and printers, along with an array of software applications, to 133 secondary schools in Trinidad and Tobago. This agreement provided for the allocation of state-of–the-art computer systems to every secondary school in the country.

This most laudable initiative was welcomed by principals, teachers, and other stakeholders in the education system. At a workshop for principals of secondary schools held at the Centre of Excellence in March 2007, Project Coordinator, Mr. Arnott West, along with several officials of the MOE/SEMP, outlined details of the disbursement, which was intended to support the MOE's Information and Communications Technology Policy as well as the Government's Vision 2020:

- The computer systems and peripheral devices would be fully networked, utilizing both hard-wired and wireless network configurations.

- Three servers would be installed at each school.

- The staff room at each school would be equipped with six computers/laptops and three printers.

- The main administration office would be networked and supplied with a computer and a printer.

- Three laptops would be supplied to support the school's Technology Education curriculum.

- Twenty computers would be supplied to the school's computer lab.

- Six computers would be assigned to the school's library to facilitate student research, while two computers would be assigned to the library staff to facilitate automated book rental and resource management.

- Four teachers from each school would be selected for training in Network Administration at five-day workshops administered by the UWI School of Continuing Studies.

- Teachers who attended the Network Administration programme would gain access to online training in the use of productivity software.

Initiatives in Teacher Training

NIHERST

In 1984, NIHERST was established as a statutory body with the mandate to further the development of science, technology, and higher education in Trinidad and Tobago. The Information Technology College, a department of NIHERST, was created to provide instruction and certification in computer-based disciplines.

At this time, there was an acknowledged dearth that existed in the teaching service for teachers to deliver an Information Technology curriculum. In 1991, under the directorship of Mr. Ian Furlonge, the Information Technology College offered the Certificate in the Teaching of Information Technology for members of the teaching fraternity. This was extended to the two-year Diploma in the Teaching of Information Technology in 1992. Graduates from this programme were expected to fill the niche for Information Technology teachers in secondary schools throughout the country. Regrettably, this programme was discontinued after the graduation of just one cohort of teachers in 1994.

In 2005, a MOE/SEMP-sponsored postgraduate diploma in Educational Technology was started at the School of Education, UWI. The programme trains an average of 30 teachers per annual cohort.

Training of Staff

A study by the Milken Exchange on Education Technology in 1999 found that teacher training programmes do not provide teachers with the kinds of experiences necessary to prepare them to use technology effectively in their classrooms (Lonergan, 2001). Others question the extent to which schools' administrators have facilitated and encouraged the use of technology in the classroom, contending that both teachers and administrators cite the need for further training in computer use. This holds true for teacher training in this country. Incredibly, even in the postgraduate Diploma in Education offered at the School of Education, UWI, St. Augustine, there is no option for specialization in the teaching of Computer Science/Information Technology and impact on the delivery of instruction.

Policy on ICT in Education

The MOE has responded to the need for a clearly enunciated policy on ICT. The "Policy for Information and Communication Technology in Education" (MOE, 2007) acknowledges that "ICT is critical to the transformation of the society to ultimately meet the universal requirements of an ever changing global environment" and alludes to the position that "ICT in education would enhance human capacity and dynamize the teaching/learning environment" (p. 3).

Of interest to most stakeholders in education, especially teachers, is the acknowledgement in the policy for ICT that the key areas to be addressed with respect to ICT in schools include:

- Preparing schools to accept the technology
- Procuring and installing technology equipment
- Training teachers to use ICT
- Integrating ICT across the curriculum

I submit that the training of teachers to use ICT be given greater prominence in the MOE's effort to introduce and integrate technology across the curriculum. The research indicated that, despite the supply of costly computer equipment to schools, there are many schools across the country in which computers, laptops, multimedia projectors, and other devices are not used or are underutilized because teachers have not been trained to use them either in instructional delivery or for the management of student data.

Proclivity of Teachers to Use Information Technology

The purpose of the study was to determine the proclivity of teaching and administrative staff to the adoption, implementation, and utilization of computer-based solutions in their delivery of instruction and resource management; and its implications for improved instruction delivery, administrative efficiency, and academic achievement. The study was conducted at a coeducational institution situated in Port of Spain, Trinidad.

The study postulated that the use of computers in the school would improve the utility and efficiency of the school. Computers would provide school administrators and teachers with new and

innovative tools to support their pedagogical and administrative activities in a variety of ways (Visscher & Spuck, 1991). The quest for effective delivery of instruction and management is facilitated and supported by the claims of tools such as school management information systems (SMIS) to provide meaningful support for school administrators in their daily activities and improving their performance, effectiveness, and efficiency. The efficiency brought about by computerized automation allows more time to be spent addressing students' educational and social needs.

Answers were sought to the following research questions:

1. *What factors affect the implementation of information technology solutions in the school?*

The research found that the following factors impacted on IT usage and implementation:

- Cost was not considered a major factor. Most teachers were convinced that the cost of procurement of computers and related devices should be of little concern given the health of the state's coffers. The general consensus was that the benefits to be derived far outweighed the cost of computer equipment.

- Security was a major concern. Teachers were of the view that every effort should be made to ensure the physical security of computer hardware. There was also concern for the security and integrity of student data on the system. It was felt that expert advice and the acquisition of security software be obtained to safeguard the data from outside attackers as well as from hostile insiders.

2. *To what extent do teachers' experience and training influence the use of information technology solutions?*

It was felt that successful implementation of IT solutions depends, to a large extent, on the relevant ICT skills and competencies of the entire staff. The research found that:

- Teachers were at varying levels of computer literacy, ranging from a few with full proficiency to several with novice ICT capability

- It was the consensus that while teachers, "in their own interest," should make every effort to upgrade their computer literacy skills, the onus was on the school's administration, and the MOE in particular, to provide basic computer training for teachers.

- The research showed that the age of teachers can affect their use of IT solutions. Younger teachers (35 years and under) were more likely to use computers and related equipment. Older teachers were found to be less competent and less likely to embrace the new technology. In most cases, teachers who were within five years of their date of retirement expressed no interest in using the technology. Many thought it was of no benefit to them to acquire computer literacy skills "at such a late stage of their career."

- It was found that the gender of staff members did not affect their proclivity to use computer-based systems. While the literature speaks to the propensity of males to use computers, there was no difference in the responses of males and females towards their inclination to use computers in their teaching/academic reporting.

- Most teachers felt that the entry of data into the system should be the responsibility of clerical office staff, provided that such staff is available. In the absence of such a facility, it should then be the duty of each teacher to enter student data into the SMIS.

Conclusion

ICT is imperative in the curriculum of our secondary schools. It affects every aspect of students' activity, and the delivery of ICT skills and competencies are indispensable if we are to fulfil the obligation to produce students who are equipped to compete successfully in the highly competitive international environment created by the harsh realities of globalization. One significant consequence is the ensuing need to measure up

favourably to international competition in the field of technology. The education system is obligated to produce a workforce that is computer literate, proficient, flexible, adaptable, and capable of accommodating and managing change.

Regrettably, in Trinidad and Tobago, ICT policy decisions are not always informed by research findings. In practice, the contention that there's "minimal research on the assessment of the effectiveness, expectations, consequences of unplanned or undesired effects of information technology solutions implementation" (Visscher & Spuck, 1991) holds true for our local education system.

The private sector must be commended for its role in assisting schools in obtaining computer equipment. A considerable number of computers in secondary schools have been procured as a result of agreements between the state and enterprises in the private sector. The role of the private sector, however, must extend beyond this. There must be greater policy and structural input from the private sector towards the reconceptualizing of education. The success of this sector depends to a large extent on the product of the education system. The private sector should therefore be intrinsically engaged in the rethinking of education to meet the demands of the age of globalization and information, by providing input into the decision-making processes in areas such as strategic shifts, curriculum planning, restructuring, standards, and assessment and evaluation.

The limited amount of training provided to teachers makes it patently apparent that schools may be installing elaborate computer systems without adequate strategies or knowledge about how to use them effectively, or the extent of their effects on the functioning of the school system (Barrett, 1999).

The educational frontier has taken on a new instructional paradigm, demanding the change to constructivist approaches, incorporating computer-based technologies. The range of new technologies and new techniques engendered by the Information Revolution allow for the production of new knowledge and the dissemination of data, information, and knowledge.

Some of these technologies include the Internet, podcasts, blogs, telecollaboration, distance learning, and audio, video, and other digital electronic media. These new technologies allow for teachers to move from being "sages on the stage" into the role of the "guide on the side," and assist students in gaining the skills and abilities required to construct and utilize knowledge consistent with their several and varied learning styles.

Brunner (2001) argues that schools today are at the threshold of a new educational revolution. He observes that both the context in which schools operate and the purposes of education are undergoing drastic and rapid change through the action of intellectual forces beyond the control of the educational community. In response to these forces our schools are compelled to respond with haste.

I concur with the following statement by Brunner (2001), and consider it ever so applicable to Trinidad and Tobago at this pivotal juncture in its educational development:

> Throughout the course of history, education has given birth to an unfailing succession of changes and utopias, but only rarely is the context itself transformed to the point of transcending the utopia. At such times it is possible either to forge ahead at speed or to be left behind and slip back. At that crossroads we now stand. (p. 145).

References

Barrett, S. (1999). Information systems: An exploration of the factors influencing effective use. *Journal of Research on Computing in Education, 32*(1), 4–16.

Brunner, J. J. (2001). Globalization, education and the technological revolution. *Prospects, 31*(2), 131–148.

Campbell, T. A., & Nugent R. K. (2003, November). Globalization and the crisis of the Caribbean intelligentsia. *Trinidad and Tobago Review*, pp. 20–22.

Cogburn, D. (1999). Globalization, knowledge, education and training in the information age. Retrieved February 28, 2008, from http://www. unesco.org/webworld/infoethics_2/eng/papers/paper_23.htm

Computer to link islands' campuses. (1987, November 27). *London Times*, p. 16.

D'Ignazio, F. (1993). Electronic highways and classrooms of the future. In T. Cannings & L. Finkle (Eds.), *The technology age classroom*. Wilsonville, OR: Franklin, Beedle, and Associates.

Gerard Phillip

Lonergan, J. (2001). *Preparing urban teachers to use technology for instruction* (ERIC Digest). New York: ERIC Clearinghouse on Urban Education. (ERIC Document Reproduction Service No. ED460190)

Mclntyre says high tech important. (1988, June 22). *Trinidad Guardian*, p. 18.

Messner, R. (1999). Pedagogical school development between the new culture of learning and the growing pressure to modernize. *European Education*, *31*(4), 22–57.

Nordgren, R. D. (2002). Globalization and education: What students will need to know and be able to do in the global village. *Phi Delta Kappan*, *84*(4), 318–321.

O'Donnell, J. (1996), The digital challenge. *Wilson Quarterly, 20*, 48–49.

Royal Bank Customer News. (1997, July 21). ROYTEC Edulink highlighted at World Bank Conference. *Trinidad Guardian*, p. 11.

Telem, M. (1993). Information technology: A missing link in educational research. *Journal of Research on Computing in Education*, *26*(1), 123–142.

Trinidad and Tobago. Ministry of Education. (2002). *Strategic plan, 2002–2006.* Port of Spain, Trinidad: Author.

Trinidad and Tobago. Ministry of Education. (2007). *Draft policy for information and communications technology in education.* Port of Spain, Trinidad: Author.

Visscher, A. J., & Spuck, D. W. (1991). Computer assisted school administration and management: The state of the art in seven nations. *Journal of Research on Computing in Education*, *24*(1), 146–168.

Teaching Standard English in the Trinidadian Classroom Thirty Years After the Carrington-Borely Report: A Survey of Recent Trends and Influences

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Abstract. This paper examines the current status of teaching English in Trinidadian classrooms in the context of accepted L2 research, which holds that any programme aimed at teaching Standard English (SE) in the Anglophone Caribbean context should consider the students' L1, in this case Trinidadian Creole. The paper also surveys the changing dynamics of the language situation since the Carrington-Borely document, bringing to the fore classroom realities at the turn of the 21st century. The data for this case study of language usage are derived from students of one secondary school. Using examples of students' oral and written language, the study indicates that some of the structures that students use in speech often do not occur in their writing, suggesting that strategies used for targeting written SE may not always be as effective for targeting spoken Standard English. Given the uncoordinated attempts and the ambivalence of teachers in dealing with teaching issues, the paper posits that a clear statement of policy on teaching English in a Creole context, more classroom materials to support changing language scenarios, and the benefit of successful research experiments both at home and among Caribbean populations abroad would guide teachers' efforts toward more purposeful outcomes.

Introduction: Conceptualizing the Problem

The teaching of English Language has been a concern of educators and academics from the post-Independence era to the present. The major challenge is that the student populations, the majority of whom are Creole speakers, are required to become competent in Standard English (SE) and their native language (L1) has tended to impact on the acquisition of SE, the L2. Carrington (1970) has identified the problem as "a failure to deal with the problems of interference between the languages in contact and with the differences between the child's native dialect and the target of the educational process" (p. 2). He has suggested that any attempt to address this problem should involve a description and comparison of the languages in use and "the application of principles and contrastive and applied linguistics to the development of materials and techniques relevant to the specific problems of the region" (p. 2).

In an effort to address the problem, there have been a number of initiatives. At the St. Augustine Campus of The University of the West Indies (UWI), linguistics has become a thriving and full-fledged area of study, in which there is good attention paid to the study of Trinidadian and Tobagonian Creoles. At the same time, scholars have produced more research on West Indian languages, including books and dictionaries. The region can even boast of strides in the area of Creole orthography. Further, the School of Education currently offers courses such as "The Structure of Creole" and "Principles, Approaches, and Methods in Teaching Standard English in the Caribbean" at the undergraduate level, to introduce teachers to language teaching/learning issues. One of the more recent innovations has been the introduction of a Bachelor of Arts degree in Language, Linguistics and Education, which the Ministry of Education has now accepted as the qualification for teaching English in secondary schools.

Despite these and other innovations, today, 30 odd years after Carrington's analysis, the issue remains an active concern. Evidence of this can be gleaned from studies by Brown-Dottin (2000), James (2002a, 2002b, 2002c, 2003), Joseph (2006), Solomon (1993), and Winer (1982). Instead, the situation has become more complex because the language of the school-age population, particularly adolescents, has changed due to the influence of other languages, for example,

American English and Jamaican Creole, as well as the language of the hip-hop culture. This had not been factored into previous research.

It has been long established that any discourse on teaching Standard English should consider the language of the children in the classroom. Support for the acknowledgement of students' language comes from researchers such as James (2003), Joseph (2006), Rickford (2001), and Winer (1993). The situation of Caribbean scholars in the first decade of the 21st century has not changed. When one compares attitudes to the Creole from the 1970s to the present, there seems to be an increased acceptance of TC and other Creoles (Craig, 2006) by the general public. However, this phenomenon has not helped to change the dynamics of the language situation in the classroom. In fact, it is my contention that 30 years later, because of mixed signals, teachers are very confused about what to do; and one of the ways to find resolution is to develop the concept among us of an evolutionary language policy, such as exists in Jamaica (Jamaica. Ministry of Education, Youth & Culture, 2001), to deal with the evolutionary requirements of school populations as the society develops. This policy must be revised periodically given the dynamic nature of language and societies. Such a policy will not solve all our classroom issues, but at least teachers will know where we stand on language teaching issues.

As intimated in this study, one of the critical issues is directly related to teachers' competence in SE. Ironically, although some teachers may not acknowledge the importance of knowing TC structures, they are often users of TC. In fact, teachers who are expected to be "exemplars" of SE (Trinidad and Tobago. Ministry of Education [MOE], 2002a, p. 2–5) often unconsciously use TC and believe that they are using SE (Craig, 1999; James, 2003a; Roberts, 1983). Consequently, an awareness of TC structures, specifically, and the Caribbean linguistic situation, generally, would assist with the teaching of SE patterns (James, 2002a; Robertson, 1988; Winer, 1993). But awareness is not all. For while it is agreed that teachers should know, should they use TC consciously or unconsciously in the classroom? There is some degree of scepticism from educators and the wider society because of a concern that the use of the Creole in the classroom will negatively affect students' competence and proficiency in SE.

Since the language issue in the Trinidadian classroom remains a concern 30 years after the Carrington-Borely report (1978), this paper seeks to explore some of the variables that impact on SE acquisition by speakers of TC. It will contrast the two societal contexts with a view to exploring how the similarities and differences impact on the language learning process. Although the language issue of teaching SE in a Creole context occurs at all levels of the education system, this paper is limited to the secondary school system and will highlight some TC features in both written and spoken forms (see Appendices). In developing the paper, I will identify, describe, and provide examples of some TC structures within the context of a collection of samples of third and fifth form writing and speech. The wealth of TC descriptive linguistics done by James (2002a, 2002b, 2002c, 2003), James and Youssef (2002), Solomon (1993), and Winer (1982) will provide a context for these examples. Next, I will review special programmes that have been designed for speakers of Creole. Overall, the intention is to show that an understanding of the impact of TC on language acquisition is crucial to the teaching of SE in the Trinidadian classroom more now than 30 years ago; and this understanding must be factored into any programme to be used with the speakers of TC. In so doing, I will also point to the changing dynamic of language in the secondary classroom that makes other hybrid linguistic considerations important, which suggests that multiple methods must be tried to foster competence in SE usage in speech and writing.

The Current SE Teaching Context and External Influences

Standard English is the language of education in Trinidad and Tobago. In keeping with this, the new Secondary Education Modernization Programme (SEMP) Language Arts draft curriculum aims at developing students' communicative competence in SE, while encouraging the appreciation of TC, the L1 of the majority of students (MOE, 2002a, 2002b). To this end, there has been a new thrust towards the development of speaking and listening skills. Previously, although there was a focus on orality,

this was relegated to its presence in literary works and also to cultural forms that were largely entertainment based, and it remained outside the realm of formal education (C. James, personal communication, April 10, 2007). The new SEMP syllabi include a listening/speaking component that targets the use of SE structures in a variety of contexts. Thus, students' oral skills are tested at the Form 3 level. However, a survey of the syllabus content for Forms 1–3 reveals that there is barely any reference to the Creole. In fact, the only reference to the Creole, in the Form 1 syllabus, occurs in the component dealing with telephone conversations, and this example treats the use of the Creole as impolite. The following is the example cited:

Owicho going to the Savannah later? [My italics] – Impolite way of speaking

Good day, I am Jackie. Can you tell me if Owicho will be going to the Savannah? [My italics] – Polite way of speaking. (MOE, 2002a, p. 2–71)

If the new curriculum is supposed to encourage an appreciation of students' L1, this is a contradiction of those aims, since the example seems to be a criticism of the Creole. The speaking/listening component in the draft syllabus for Forms 4–5 includes an attempt to make students aware of the distinction between SE and TC pronunciation (MOE, 2005). Despite this, writing skills are focused more on the production of SE structures without necessarily considering how TC oral structures may impact on students' writing. Since these syllabi are under review, it is hoped that these issues will be addressed when the documents are revised.

However, stronger initiatives to assess oral skills have been offered by the Caribbean Examinations Council (CXC). There is an oral assessment requirement for the Caribbean Advanced Proficiency Examination (CAPE) Communication Studies that tests students' communicative competence in SE. This has been criticized for a number of reasons but it is expected to remain as a vital element in Communication Studies. Within recent times, there have been hints that the Council is considering an oral English exam for the fifth form level. This has been met with resistance by many

teachers but, thus far, there has been no further decision by CXC on oral examinations at this level.

A second feature of this current context, apart from the attention to oral skills as identified in the Language Arts curriculum, is that students are exposed to more of the written Creole in West Indian literature. Ironically, although most students' L1 is TC, they generally experience difficulty when required to read Creole structures aloud. A possible reason for this is a lack of standardization of the phonological transcription of TC (Robertson, 1988; Winer, 1990), as well as the fact that Trinidadian students are not very familiar with other West Indian Creoles. Additionally, since the 1970s, the introduction of CXC examinations to replace the General Certificate of Education (GCE) created the need for language textbooks and literature anthologies reflecting West Indian content. As such, West Indians are publishing more textbooks, including Language Arts textbooks, some of which have modules dealing with the Creole, although these sections tend to be limited.

Nevertheless, one programme that deals with Creole structures in a comprehensive manner is Module 2: Language and Community of the CAPE Communication Studies syllabus. In this module, students are expected to:

- identify the salient features of one Creole or Creole-influenced vernacular...which make it different from Standard English;

- explain the challenges faced by the Creole or the Creole-influenced vernacular in learning English;

- describe their territory or any other territory along the following lines:
  o the range of languages (including Creoles);
  o the influence of history on the language situation;
  o attitudes to languages used;
  o the potential of these attitudes for integration, marginalization and alienation. (CXC, 2003, p. 11)

Therefore, at Form 6, students are expected to explore Creole structures, both in speech and

writing, and are aware, perhaps for the first time, of Creole structures that may have influenced their writing. Although Communications Studies is a fairly new subject, one can surmise that since it is compulsory for students in the Advanced Level programmes, there has been an increased awareness of the basic differences and similarities between SE and Creole structures.

A third feature of the current classroom context is the way the public forum feeds into what happens in the classroom. In the 1970s, Creole forms rarely appeared in the newspapers. Thirty years ago, radio programmes were conducted in SE, which meant that listeners were exposed to models of the spoken language. However, in 2007, this no longer obtains. The Creole can be heard on the radio more than it occurred in the past. TC is used for many programmes, especially call-in programmes in which listeners express their views on a variety of topics (Carrington, 2001). SE is generally reserved for newscasts and other formal programmes. Disc jockeys use TC most of the time, and when reading the news sometimes use TC pronunciation or change their accents to one that imitates an American accent. (Perhaps they associate SE with a particular accent.) In addition, another noticeable feature is the extent to which their language is influenced by Jamaican and American speech patterns, namely dub, reggae, and gangsta rap. Generally, the listening audience for such disc jockeys tends to be young people, including secondary school students, who respond to the call to "big up" or "shout out" their friends. Furthermore, there have been radio announcers who select a school each morning to greet. On the whole, a link has been established between the public electronic media and the classroom, and as such radio programming has some influence on the language used in the classroom. This phenomenon adds to the challenge of the teaching and learning of SE. Therefore, students require support in the classroom to be able to distinguish between both languages because the radio stations no longer provide the models of SE usage that obtained in the past.

Another variable that influences students' language is television programming. Similar to the 1970s, the language of television is predominantly SE. However, it is important to note that most programmes are derived from foreign sources, especially American, so students are exposed to different varieties of American English. Music videos, especially American and Jamaican, also influence students' language. The Creole is reserved for some advertisements, cultural events, and other locally based programmes. One exception is Gayelle, a channel that seems to be committed to using the Creole for most of its programmes. The extent and type of viewers are unknown at this time so no comments can be made on the impact of this extensive exposure to the Creole. However, one can say that the television and other media impact on the acceptance of TC, as well as attitudes towards its use in education.

Attitudes to the Creole in Education

I will now turn to attitudes to the Creole in education because it affects the politics of what gets taught and how it gets taught. I will survey some attitudes in the post-1980 period up to the present. Some of the people quoted might have changed their positions, but the purpose here is to present a chronological display of attitudes. Perhaps one of the more scathing views was offered by economist Hollis Wilson, who described the use of the Creole as "reducing a people to a communication medium suitable to the animal kingdom with its monosyllabic grunts and groans" (Wilson, 1985, p. 11). On the other side of the spectrum, Anthony (1994) acknowledges the value of the Creole: "we live in Trinidad. Trinidadianese, or whatever we call our dialect, is the correct way we write or speak" (p. 9).

Even among academics, there have been shifting positions on the place of TC in the classroom. The following extracts demonstrate this:

No one needs to abandon their own dialect in order to become a reader, a thinker or a writer. (Heydorn & Heydorn, 1986, as cited in Jacob, 1986)

I do labour under the terrible fear that if there is no improvement in the present situation, the time will come when there will no longer be two co-existent languages in our fair Trinidad, English having suffered death from atrophy. (Giuseppi, 1994, p. 16)

I can think of ways in which it [dialect] could be used, particularly from upper primary level one,

but since as a people we have not yet developed the skills to handle it in conjunction with Standard English, a choice has to be made, and I am forced to conclude that neither at primary, secondary, nor even at first-degree level is there room at present for dialect in our education system. (Youssef, 1995, p. 9)

Since it is so easy to gravitate to Creole, we condemn ourselves to being a nation mainly of Creole speakers with a basic working knowledge of the more generally effective and intellectually sophisticated Standard English. (Ragbir, 2002, p. 10)

Students can master English while keeping their Creole intact. Oh, yes, Creole interferes in the learning of English, but that cannot be avoided, as one of the main ways of learning is to model what is new on what is old, or, in other words, to move from the known (Creole) to the unknown (Standard English). But, as is well-known, old and new models can co-exist and take value from one another! (James, 2002b)

The newspapers cannot be left out of the line-up. Today, the language of the print media is still predominantly SE, although Creole may be used when quoting eyewitness accounts of events (Carrington, 2001). Ironically, even articles that support the use of TC in the classroom are written in SE, although TC examples are used to explain a particular point. Thus far, only one columnist in the *Trinidad Guardian*, Lisa Allen-Agostini, writes her articles exclusively in TC. This initiative has had varied reviews from the public. On the one hand, she has been accused of embarrassing the country since the newspaper has an international readership. Also, others have complained that the TC is too hard to read. Opponents to the column suggest that Allen-Agostini should follow the example of other columnists who use the Creole to illustrate a point or use a language form that lies between SE and TC. On the other hand, Trinidadian migrants have praised her efforts. They regard the column as a mechanism that allows them to keep in touch with their native language, especially its unique words and expressions (L. Allen-Agostini, personal communication, April 10, 2007). Similarly, Carolyn Cooper, a Jamaican linguist, has written Creole newspaper columns in the *Jamaica Gleaner*. This innovation has met with severe criticism from some linguists and the general public, while others have supported her efforts (Cooper, 2000).

Despite these varied views, a comparison of attitudes towards the Creole among a small sample of teachers reveals that there is an increased acceptance of TC and other West Indian languages (Craig, 2006). This phenomenon has changed the dynamics of the language situation. This sentiment was also expressed by Mühleisen (2001), based on her research among a sample of Trinidadian teachers. She comments:

> What appears to be at the verge of disappearance, however, is the negative evaluation of TEC on grounds of false notions of "correctness" and "incorrectness" as well as the aesthetic value judgements based on the belief that one variety is a corrupt form of the ("pure") other. So, while both TEC and Standard English are there to stay, the notion of TEC as "Bad English" truly seems a dying form. (p. 76)

Although this study was conducted with a small number of students, one has to merely look around to discern how much attitudes to the Creole has changed.

The Realities of English Teaching in the Trinidadian Classroom

I will now focus on data showing the realities of teaching English in the Trinidadian classroom. A survey of the students' language reveals that Creole structures occur in their speech and writing. As a teacher of Forms 3 and 5, I am faced with the challenge of finding strategies to teach in the mix of TC and SE structures. I have chosen structures that occur in Language and Literature classes. The following extracts are examples of this:

Form 5 English A Class: Discussion on the Smelter Issue

S5: I listen to Gladiator in the morning, <u>rite</u>, although <u>he does cut off people</u> and talk stupidness <u>and ting</u>, <u>an</u> sometimes he is very firm in what <u>he say</u>. Is people who <u>ain't</u> doin

research, grassroots PNM who votin till they ded, who support de Prime Minister <u>dong</u> to anyting ....<u>da</u> is <u>de</u> bottom line so dey cud put on de jersey an say, "<u>Smelta</u>, smelta," an dance an ting, yuh know.

S1: It's just a few hundred people to smelt so is <u>jus makin dollars</u> and cents not de <u>healt</u> a de people because you not supposed to have houses from one hundred kilometers away.

S4: Dey <u>going an close</u> dong dis gamblin ting rite, an online gaming rite, one point someting million people goin home rite, an dey goin an create a smelta plant, employin a couple hundred people. So wat wud happen to de odder million an someting <u>people dat is</u> on de bread line?

Form 3 English B Class: Discussion on Power and Authority in *The Chrysalids*

S4: <u>I feel dat how</u> <u>David father</u> abuse <u>he power</u> because he feel he had authority to say what was a deviation and what wasn't. And he jus <u>gone an kill</u> de lady cat jus so because he feel he know, jus because he hear someting, some book dat say dis or dat or de next. He feel dat right and he <u>din [didn't]</u> wait to fin out <u>dat how</u> if dat was actually legal if the cat was actually of ah different species, like how Rosalind an David were. Dey were a kind of different species from dem. Dey had ah link in dey mind so <u>he had kinda like abuse</u> he power, kinda cross the line of being a normal farmer.

S6: Wen Rosalin's father, wen he got de horse, <u>am</u>, he kinda abuse his power to get dem government approved because dey would do tings fasta dan a normal horse wud do.

S4: <u>De horses is</u> approved because dey <u>coulda do</u> de amount of work dat two horses did an yuh does have to cater for <u>one a dem</u> but yuh gettin more work an ting so <u>daz [that's]</u> why <u>dey was</u> approved.

Form 5 Language – Written Samples

Sample 3 – Short story

Aleesa's friends who were Crystal, Kristin and Chloe were all unruly, rude and party goers. The four friends <u>have</u> [had] been together for their whole entire lives.

Sample 4 – Argumentative essay

Some people say that buy local means that they are buying any available product <u>that in</u> the country. They also say that even though <u>some product come</u> from other countries <u>it</u> available locally so it's local goods.

Form 3 Literature – Written Samples

<u>Beka character kind of change</u> when she made her decision to stop lying to her family. When she made this decision to stop lying it was very hard because she lied to get [out] of trouble she brought upon herself. When <u>Beka family</u> notice this change it was to[o] late because the father gave up on her.

Before <u>Beka father</u> was furious with her for lying and her mother was disappointed and she <u>wasn't to do</u> [didn't do] anything around the house. But after she changed her father got <u>more closer</u> to her.

As you can see from the above, TC structures are evident in the students' speech and writing, in addition to other grammatical issues that are not necessarily influenced by the Creole. Some of the TC structures are as follows:

- When the diphthong "ow" is followed by "n," the "n" becomes "ng" – dong [down]

- "th" is not pronounced; it is pronounced as "t" or "d" – e.g., ting, dat, healt

- "t" and "d" in most final consonant clusters are not pronounced – las, an

- Reduction of "nt" to "n" in negative words – couldn

- Some common plurality markers are "an dem" and "a lot of"

- Absence of the copula in sentences with predicates

- Double comparatives

- "Does" and "use to" are used as auxiliaries. Also, "does" may be used for emphasis or to signify habitual action

- Use of the bare verb for all subjects for the present tense. It is also used for the past tense of some verbs
- Intensifiers and fillers such as "an ting," "rite," and "yuh know"
- Absence of the apostrophe to mark possession
- Multiple negative words

(James & Youssef, 2002; Roberts, 1983; Solomon, 1993)

Many other TC structures used in the samples have not been listed, in addition to other structures that are not evident in the students' language.

Review of Teaching/Learning Strategies

From the above, it is evident that the language situation in the West Indies needs to be addressed urgently. Although there has been a wide range of research on West Indian Creoles, it has tended to focus more on the descriptions of the language situation and has offered suggestions to address the challenges teachers and learners face. However, thus far, I have seen only one study that has targeted programmes that have been used in the West Indian context to teach SE to Creole speakers. Instead, I have found a number of studies conducted in foreign lands to help Creole speakers develop competence in the target language. Therefore, with one exception, most of the studies cited in this section are efforts by teachers in American institutions with mainly Caribbean students.

There have been some attempts to address the challenges students face when their L1 is different from the language of the classroom, and we have a lot to learn from them because they have been tried with our own students in foreign lands. One programme that has achieved some measure of success in bridging the gap between Creole and SE competence is the Caribbean Academic Program (CAP) that is used in some Chicago schools. It has been designed to help Caribbean migrants who fail American standardized tests when they enter the schools. Similar to the Language and Community module of the CAPE Communication Studies programme, CAP explores the historical and social aspects of the Creole, in addition to contrastive analysis of SE and the Creole (Fischer, 2000). One of the important features of this programme is the insistence that students should value their L1.

In Jamaica, Carpenter (2000) experimented with a different approach, teaching English as an Alternative Language (EAL). This was attempted because of an observation that students faced challenges in their acquisition of Standard Jamaican English [SJE]. She explained:

> The difficulty, as I see it, is really one of alternating between languages, Creole on the one hand with its mother-tongue familiarity and fluency, and the official SJE, which is seen as a language tool to be used, rather than spoken, thereby retaining its 'foreignness.' (p. 75)

This was a novel approach that focused on teaching SE as a second language. It incorporated the use of taped British drama and documentaries, dialogue, grammar drills, and portfolios, and yet encouraged students to value their native language. The researcher observed an improvement in the students' competence and the students generally felt that they benefited from the exercise.

Research on strategies to assist speakers of Creole in the development of communicative competence in SE has not been limited to secondary school students. Kennedy (2003) conducted a study of Caribbean students in a teacher education class to determine if the use of the Creole in the classroom would enhance their SE competence. Early in the programme, she discovered that although the students used their L1 in their speech, they were reluctant to write in this language. As she delved into the reasons for their reluctance, she discovered that they still held on to the notion that the Creole was bad or broken language. However, as their attitudes changed they welcomed the idea of writing their drafts in the Creole and then producing a SE draft. Students' reactions to this practice are reflected in the following statements:

…a good experience seeing that I have not written like that, or even talked like that in so long. It was even good reading what other students' examples of their own way of speaking sounds like.

from speaking to other students, I've learned that it shouldn't make me uncomfortable because there

are lots of educated people who do freewriting (in vernaculars) and even pub(lish) it in there books.

At the beginning of the assignment, I thought it was difficult but as I began to write, everything began to flow. It was a different assignment, and I enjoy doing. (Section: Student reactions)

This study, though it involved a small sample, suggests that the use of the Creole is a "nurturing [technique] that should be explored to honor the students' cultures and make them feel included in the classroom community" (Section: Summary). A similar view on the use of the Creole has been offered by Craig (1999). He suggests that students "develop their thinking skills, engage in problem-solving, and experience child-centred processes in their vernacular better than they can in a strange language, English" (pp. 63–64).

Programmes such as CAP and EAL, which were developed to teach SE, have been tried and tested and have received some measure of success. However, I have not discovered instances where some of the strategies suggested by linguists have been tested in West Indian settings. For example, Craig (1999) has offered a possible programme, Teaching English to Speakers of a Related Variety (TESORV), which may target the unique problems of West Indian students. This programme incorporates listening, speaking, writing, and finally reading skills in a systematic way, and involves an Augmented Language Experience Approach (ALEA). Interestingly, an extract of the Trinidad and Tobago Reading Scheme of Work for primary schools was modified using ALEA. In addition, TESORV was suggested for the secondary level, with details on how the programme could be used. I have not seen any studies on the application of this programme to determine how it could impact on Trinidadian or other West Indian students. Perhaps this is already in the making. Nevertheless, the common thread that runs through most of the programmes mentioned in this paper is that they have as their base an acceptance of Creole languages as a springboard from which students can acquire SE. For the most part, these programmes treat the acquisition of SE in a bilingual context.

All of this is relevant since globalization has removed barriers that previously kept one's culture and norms hidden, and with the widespread availability of technological advancements a mere click of a mouse is all it takes for anyone anywhere in the world to gain access to another country. Further, migration to First World countries, which began in the post-Independence period, continues today. Thus, West Indian children end up in foreign schools and have to communicate in the classroom, sometimes in a language that is different from theirs, and they may be regarded as academically troubled and are sent to special education classes (Fischer, 2000). Additionally, with the increase in sporting events, sportsmen and officials have to give interviews and communicate in a way that an international audience can understand. One example of this is Paul Keens-Douglas, one of the commentators for the Opening Ceremony for the 2007 Cricket World Cup, who revealed in a television interview that, as he described the activities during the ceremony, he was always conscious that he was speaking to an international audience and had to speak more slowly than usual and without local slang that could confuse others who are unfamiliar with West Indian languages. These realities, and others that have not been mentioned here, signal a need to deal with the language situation.

The Way Forward

As the discussion above suggests, attitudes to the use of Creole in education still range from criticism to an acceptance of its intrinsic value. Although there are other variables that influence students' acquisition of SE that did not exist in the 1970s, some of the challenges of the teaching/learning situation are still present. In the Trinidad context, the closeness of the lexicon of SE and TC intensifies the challenge. There is little consensus on the most effective strategy for addressing the problem of SE acquisition, but the research suggests that attention should be paid to an appreciation of students' L1 as it can be used to enhance students' acquisition of the target language. Strategies to teach SE need to specifically address both the speech and writing of TC speakers. Moreover, consideration should be given to the differences in levels of TC usage in speech and writing since it may be more challenging to develop competence in speech than in writing. This is because in the community and

at home students may be exposed to TC, their L1 and language of comfort.

Further, policy makers and educators should work towards a national policy on the use of TC in the classroom that is informed by programmes which have been developed already, including those that have been used in foreign countries that specifically target speakers of Creole. The intention is not to reinvent the wheel but to explore what has worked in the classroom. These programmes can offer insights into practical strategies that can be used for speakers of TC. Yet, any strategies that are developed should be relevant to the Trinidadian classroom. In addition, the complexity of the emerging hybrid forms cannot be overlooked and needs more than a simple understanding of the language continuum. Teachers should be aware of the changing language patterns and should also focus on the ongoing language influences, of which TC is only one.

In the final analysis, in addition to selecting appropriate instructional methods, teachers must be aware that if students are to learn SE, they must be motivated to acquire it and understand its usefulness in Trinidad as well as the global village. Therefore, English teachers should be students of language in use as well as linguistics as an area of research, so that they will be aware of developments that can enhance the teaching/learning situation. Sound knowledge of TC will assist educators in identifying the areas of greatest challenge to the TC speaker who is acquiring competence in SE. At the same time, since Creole structures will be used in the classroom, acceptance of the Creole as a legitimate language will perhaps motivate students to accept SE equally as another language they can use in the relevant context.

References

Anthony, B. (1994, March 13). How about an English snob club. *Sunday Guardian*, p. 9.

Brown-Dottin, M. (2000). *The effect of Trinidad English-lexicon Creole as a medium of written communication on the reading proficiency of adults in literacy classes in Trinidad.* Unpublished doctoral dissertation, The University of the West Indies, St. Augustine.

Caribbean Examinations Council. (2003). *Caribbean Advanced Proficiency Examinations: Communications studies syllabus*. St. Michael, Barbados: Author

Carpenter, K. (2000). Research report: Teaching English as an alternative language. In *Society for Caribbean Linguistics 13th biennial conference: Conference presentations, 16–19 August, 2000* (pp. 74–82). Mona, Jamaica: SCL.

Carrington, L. (1970, August). English language teaching in the Commonwealth Caribbean. *Commonwealth Education Liaison Committee Newsletter*, 2(10), 1–2.

Carrington, L. (2001). The status of Creole in the Caribbean. In P. Christie (Ed.), *Due respect: Essays on English and English-related Creoles in the Caribbean in honour of Professor Robert le Page* (pp. 24–29). Mona, Jamaica: UWI Press.

Carrington, L., & Borely, C. (1978). *The Language Arts syllabus 1975: Comment and counter comment.* St. Augustine, Trinidad: Faculty of Education, UWI.

Cooper, C. (2000). (W)uman tong(ue): Writing a bilingual newspaper column in 'Post-colonial' Jamaica. In *Society for Caribbean Linguistics 13th biennial conference: Conference presentations, 16–19 August, 2000* (pp. 91–96). Mona, Jamaica: SCL.

Craig, D. (1999). *Teaching language and literacy: Policies and procedures for vernacular situations*. Georgetown, Guyana: Education and Development Services.

Craig, D. (2006). The use of the vernacular in West Indian education. In H. Simmons-McDonald & I. Robertson (Eds.), *Exploring the boundaries of Caribbean Creole languages* (pp. 99–117). Mona, Jamaica: UWI Press.

Fischer, K. (2000). The use of Caribbean English Creole in the education of Caribbean immigrant secondary students. In *Society for Caribbean Linguistics 13th biennial conference: Conference presentations, 16–19 August, 2000* (pp. 159–171). Mona, Jamaica: SCL

Giuseppi, U. (1994, May 8). The tongue that Shakespeare spake. *Trinidad Guardian*, p. 16.

Jacob, D. (1986, August 29). Looking deeper into dialect. *Trinidad Express*, p. 19.

Jamaica. Ministry of Education, Youth & Culture. (2001). *Language education policy*. Kingston, Jamaica: Author.

James, W. (2002a, February 23). A *different, not an incorrect, way of speaking, Pt. 1*. Retrieved January 30, 2006, from http://www.trinicenter.com/winford/2002/Feb/

James, W. (2002b, March 24). A *different, not an incorrect, way of speaking, Pt. 3*. Retrieved January 30, 2006, from http://www.trinicenter.com/winford/2002/Mar/242002.htm

James, W. (2002c, May 5). A *different, not an incorrect, way of speaking Pt. 4*. Retrieved January 30, 2006, from http://www.trinicenter.com/winford/2002/May

James, W. (2003, May 11). *Doing our own thing with English 1*. Retrieved January 30, 2006, from http://www.trinicenter.com/winford/2003/May/112003.htm

James, W., & Youssef, V. (2002). *The languages of Tobago: Genesis, structure and perspectives*. St. Augustine, Trinidad: School of Continuing Studies, UWI.

Joseph, B. (2006, November 8). *Improving literacy through communication experiences*. Retrieved December 19, 2006 from the Connexions Web site: http://cnx.org/content/m14074/latest/

Kennedy, E. (2003). Writing in home dialects: Choosing a written discourse in a teacher education class. *The Quarterly*, *25*(2). Retrieved April 4, 2007, from http://www.nwp.org/cs/public/print/resource/571

Mühleisen, S. (2001). Is 'Bad English' dying out? A diachronic comparative study of attitudes towards Creole versus Standard English in Trinidad. *PhiN*, 15, 43-78. Retrieved April 4, 2007, from http://web.fu-berlin.de/phin/phin15/p15t3.htm.

Ragbir, L. (2002, May 29). Nation of mainly Creole speakers. *Trinidad Newsday*, p. 10.

Rickford, J. R. (2001). Ebonics and education: Lessons from the Caribbean, Europe and the USA. In C. Crawford (Ed.), *Ebonics and language education of African ancestry students* (pp. 263–284). New York: Sankofa World Publishers.

Roberts, P. (1983). Linguistics and language teaching. In L. D. Carrington, D. R. Craig, & R. Todd-Dandaré (Eds.), *Studies in Caribbean language* (pp. 230–244). St. Augustine, Trinidad: Society for Caribbean Linguistics.

Robertson, I. (1988). *Teaching Standard English in Creole-based communities of the Anglophone Caribbean*. Unpublished paper, The University of the West Indies, St. Augustine, Trinidad

Solomon, D. (1993). *The speech of Trinidad: A reference grammar*. St. Augustine, Trinidad: School of Continuing Studies, UWI.

Trinidad and Tobago. Ministry of Education. Curriculum Development Division. (2002a). *Secondary Education Modernization Programme: Secondary school curriculum. Form one Language Arts*. McBean, Couva: Author.

Trinidad and Tobago. Ministry of Education. Curriculum Development Division. (2002b). *Secondary Education Modernization Programme: Secondary school curriculum. Form three Language Arts*. McBean, Couva: Author.

Trinidad and Tobago. Ministry of Education. Curriculum Development Division. (2005). *National secondary education Level II: Draft curriculum guide: Language Arts*. McBean, Couva: Author.

Wilson, H. (1985, May 25). By promoting dialect ahead of English we are creating 'ugly West Indians.' *Trinidad Express*, p. 11

Winer, L. (1982). *An analysis of errors in the written English compositions of Trinidadian English Creole speakers*. Unpublished doctoral dissertation, The University of the West Indies, St. Augustine, Trinidad.

Winer, L. (1990). Orthographic standardisation for Trinidad and Tobago: Linguistic and sociopolitical considerations in an English Creole community. *Language Problems and Language Planning*, *14*(3), 237–268.

Winer, L. (1993). *Varieties of English around the world: Trinidad and Tobago*. Amsterdam,: John Benjamins.

Youssef, V. (1995, April 14). A question of time and place. *Trinidad Guardian*, p. 9.

Appendix A
Form 5 Language Class: Discussion on the Smelter Issue

S1: Dey will look dong on him. Trinidad wud say me ain't want noting wit he. Wedda or not he like it; he have to live here.

S2: I believe Mr. Manning is concerned about bringin in money into de country because everyting he talkin about is more jobs, more money and that is all he studyin. He not focussin on de environmental factor. Dat's why I feel dis country is so based on corruption because all dey studyin about is de money.

S1: It's just a few hundred people to smelt so is jus makin dollars and cents not de healt a de people because you not supposed to have houses from one hundred kilometers away.

S3: It don't have much people. You have to do engineering an stuff.

S4: Dey going an close dong dis gamblin ting rite, an online gaming rite, one point someting million people goin home rite, an dey goin an create a smelta plant, employin a couple hundred people. So wat wud happen to de

odder million an someting people dat is on de bread line?

S5: I listen to Gladiator in the morning, rite, although he does cut off people and talk stupidness and ting, an sometimes he is very firm in what he say. Is people who ain't doin research, grassroots PNM who votin till they ded, who support de Prime Minister dong to anyting ....da is de bottom line so dey cud put on de jersey an say, "Smelta, smelta," an dance an ting, yuh know.

S1: He have a point, yuh know, because de more meeting dey go to, dey gettin their URP, their work an ting. Dat is why some a dem does support. Dey know dat is where dey comin from. Every time dey go de meeting on Thursdays or their party meeting an stuff, dey eating up. Dey getting their URP, their ten days, any little ting.

S6: But even people living here [south east] could be affected because when the rain fall we does smell the gas in Point-a-Pierre. And even if they build up that big Alcoa project, now we could get affected from quite down here. They don't have the land mass for the smelter.

S1: And they have the audacity to say that there is ah Alcoa project in America so we could build one in Trinidad, but he didn watch at the size.

S7: The government doh have to pass a law or anything?

S1: I think like we talkin all about this but we have to think about this point. De money dey makin, it not comin in we hands. It not benefitin us; it not comin in we hands. It not benefitin us; it not helpin us, right, an in de end if yuh check out de cost yuh wud have to use it for medical bills for people who sick. It will not benefit de economy really.

Form 3 Literature Class: Discussion on Power and Authority in *The Chrysalids*

S1: I tink he took advantage a Petra because they were not sterilize, an well he want her as a wife to make children an ting for him.

S2: He took advantage a David an all too when David now came into de Fringes because wen he went to Waknuk he was jus lookin at dem and ting, buh wen David came to de Fringes he did not want to help him or anyting like dat. He jus tell dem to kill him, buh dey didn kill him, because he wanted to take revenge on his brother Joseph.

S3: Wen he went lookin for dem because he did not know what they was capable of, he did not know their powers and he was afraid of them.

S4: Because, an ting, he had embarrassed him in front de whole community sometime before.

S5: He was a old man; he was in he forties an she was about eighteen or nineteen.

S4: I feel that how David father abuse his power because he feel he had authority to say what was a deviation and what wasn't. And he jus gone an kill de lady cat jus so because he feel he know, jus because he hear someting, some book dat say dis or dat or de next. He feel dat right and he din wait to fin out dat how if dat was actually legal if the cat was actually of ah different species, like how Rosalind an David were. Dey were a kind of different species from dem. Dey had ah link in dey mind so he had kinda like abuse he power, kinda cross the line of being a normal farmer.

S6: Wen Rosalin's father, when he got de horse, am, he kinda abuse his power to get dem government approved because dey would do tings fasta dan a normal horse wud do.

S4: De horses is approved because dey coulda do de amount of work dat two horses did an yuh does have to cater for one a dem but yuh gettin more work an ting so daz why dey was approved.

S1: I tink dat de Sealand woman use her authority in a positive way because unlike de odda characters in de book dey used dear authority to even get more or to affect somebody negatively.

S3: How about wen she didn have enough fuel to get to Rachel an dem?

Appendix B
Students' Written Language
(Some of the errors are highlighted)

Form 5 Language

Sample 1 – Summary skills

Dispite the increast participation in the labour fource women are at the disadvantage, they are faced with low wages and less visible <u>jobs which earns</u> them less than 20-30% less than the wages of men.

Sample 2 – Short story

Aleesa just left home. She was eighteen <u>now</u>, she could <u>now</u> take care of herself. She was a girl who grew up in the countryside and she now decided <u>she want</u> to leave her parents and live her life on her own.

Sample 3 – Short story

Aleesa's friends who were Crystal, Kristin and Chloe were all unruly, rude and party goers. The four friends <u>have</u> [had] been together for their whole entire lives.

Sample 4 – Argumentative essay

Some people say that buy local means that they are buying any available product that is in the country. They also say that even though <u>some product come</u> from other countries <u>it is</u> available locally so it local goods.

Form 3 Literature – Comments on Beka Lamb

Sample 1

<u>Toycie and Beka was</u> best friends. Toysie was a little older than Beka and they both lived on the same street. <u>Toycie attitude</u> towards school was good she was willing to go to school get an education and after get a job.

Sample 2

Along with Beka's change of character, her family reacted quite the same, for it was unnoticable that Beka was undergoing such change. In their opinion Beka never had the intension of doing things the right way and both mother and father never thought that <u>she would dropped</u> the habit of lying.

Sample 3

<u>Beka character kind of change</u> when she made her decision to stop lying to her family. When she made this decision to stop lying it was very hard because she lied to get [out] of trouble she brought upon herself. When <u>Beka family</u> notice this change it was to[o] late because the father gave up on her.

Sample 4

Before <u>Beka father</u> was furious with her for lying and her mother was disappointed and she <u>wasn't to do</u> [didn't do] anything around the house. But after she changed her father got <u>more closer</u> to her.

Appendix C
Table Showing Errors in Students' Written and Spoken Language

Category	Written Language	Spoken Language
Verb tenses – agreement (present)	All *he* really *need* is a small room to make his shoe. I hope that *it don't* fall on deaf ears. In the community *there is a lot of* elderly people living here.	Wedda or not he like it, *he have* to live here. **The *events* in the first stanza *takes* place in the night.**
Verb tenses – morpheme "ed" (past)	They *use* to always harass me because I was a little unique. She eventually *develop* a program.	De Sealand woman *use[d]* her authority in a positive way. I think he took advantage a Petra because dey *were not sterilize* an well he *want* her as a wife to make children an ting for him.

Category	Written Language	Spoken Language	Category	Written Language	Spoken Language
Auxiliary	He knew that *he supposed* to be protecting King Duncan but instead he killed him.	He *not focussing* on de environmental factor. Dat's why I feel this country is so based on corruption because all *they studyin* about is de money. When the rain falls *we does smell* the gas from Point-a-Pierre	Intensifiers, sentence tags, other TC expressions		He have a point, *you know*, because the more meeting they go to, they gettin their URP, their work *an ting*. I feel *dat how* David father abuse his power because *he feel he had* authority to say *wat* was ah deviation *an wat wasn*.
Possession	The irony of *Macbeth attempt* to secure his position is that he is not man enough to kill someone. The *narrator response* was one of interest. This was *my best friend brother*. I walked into the *principal office* and received my results.	I feel *dat how David fadda* abuse his power.	Structures that are neither SE nor Creole	It was years then one day I saw David bruised and hurt. In Jada's story it made everyone cry.	They had a link in they mind so he *kinda like abuse* he power.
			Inter-language	I *felt* my heart *sunk* and disgust *filling* my insides. It *had* finally *work*.	She *would have* surely *get* rape.
			Hyper-correction		*I are* correct. *They uses* to go home early.
Negation	But she *didn't* work hard for *nothing*. I *didn't* see *none* of their faces.	Trinidad wud say me ain't want noting wit he. The government doh have to pass a law or anything?			

N.B.: The writer acknowledges that some of the sentences contain more than one TC structure; however for the purpose of this table, only one particular category has been highlighted.

Participating in a Virtual Learning Community

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Abstract. Over the course of one semester, 25 students enrolled in a postgraduate course in curriculum were registered as members of a virtual classroom. A discussion board was used to promote the development of a virtual learning community, and to create a safe place and a more flexible time frame in which students enrolled in the course could explore ideas in more depth and could be more reflective about their practice than would normally be possible in the physical classroom. An exploratory case study was conducted in an attempt to understand whether and how participants in the course cultivated and supported a sense of community on the board, and to identify strategies students used on the discussion board to conduct critical exploration of major concepts encountered in the course. Ethnographic methods were used to collect data. Initial findings suggest that although participation on the discussion board helped to foster a sense of community, not all students experienced such a sense of community or benefited from the experience. However, students' interactions on the board revealed improvement in the ability of most to think critically about key concepts and about their own professional experiences.

Introduction

The increasing use of information and communication technology (ICT) to support instructional delivery still represents a significant innovation for many tertiary level educational institutions in the Caribbean. Fullan (1993) describes productive educational change as fraught with unknowns. Lockwood and Gooley (2001) suggest that innovations using ICT may face even higher levels of risk than other innovations, because of the uncertain status of ICT and stakeholders' unfamiliarity with the use of ICT in many contexts. Yet Lockwood and Gooley note that, even now, little evaluation of ICT use in the delivery of tertiary level programmes is being conducted, partly owing to a lack of time and expertise. So far, research conducted internationally indicates that the approach is perceived by stakeholders as having both strengths and limitations. Furthermore, Pipitone, Fulantelli, and Allegra (2004, p. 3) cite studies that suggest that "no substantial difference" exists between the results of traditional learning and online learning. They refer, however, to McGorry (2003), who notes that not only the outcomes, but also the overall quality of the learning experiences afforded by each approach must be a significant consideration in evaluating the success of the use of ICT in the curriculum. McGorry identifies six traits of quality in online learning: flexibility,

responsiveness and student support, student learning, interaction, technology and technical support, and student satisfaction. However, since so few studies have been conducted, little evidence of the processes and outcomes that might indicate quality of online learning in tertiary level institutions in Trinidad and Tobago is available to persons who have adopted, or who may wish to adopt, this approach to instructional delivery. It is important, therefore, to attempt to answer the question: Can the use of ICT truly support methods of teaching and learning that transform the manner in which students appropriate and construct knowledge? This study sought to understand how one tool, the discussion board, was used by students to support learning in a graduate level course.

Context

The course that was the focus of this study had been taught over the three years since its inception as a face-to-face (f2f) course. It was part of a programme in teacher education, and lasted one semester (13 weeks).

Awareness of The University of the West Indies' commitment to open learning, as stated in its strategic plan, played some part in the researcher's decision to put the course online using the WebCT learning environment. However, the change from the traditional method of course

delivery to blended learning was made primarily because the researcher was dissatisfied with the level of autonomy in their approach to learning demonstrated by students enrolled in the programme, and with the level of critical thinking they had demonstrated during classroom discussions, as well as in coursework submitted in previous courses. The establishment of the discussion board was therefore intended to encourage the development of a virtual learning community that would support new ways for students to deal with course content. The board facilitated asynchronous interactions among classroom participants, who were encouraged to present and reflect on their own ideas and experiences. It was used in this course mainly to extend students' f2f interactions in regular classrooms.

The discussion board was also intended to meet the needs of working teachers enrolled in the programme, by allowing them more flexible schedules for interacting with each other and with the course content. The researcher felt, finally, that this method of instructional delivery was important to increase teachers' use of and comfort with ICT, given the Ministry of Education's thrust towards the use of the technology in schools as part of its plan for educational reform in Trinidad and Tobago.

Students were required to make at least eight entries on different topics on the discussion board, with some topics being introduced by the tutor and other issues being raised by the students themselves. The lecturer's participation on the board was limited to occasional comments and questions to promote further discussion.

The purpose of the study was to develop a clearer understanding of how students interacted on the discussion board, and of their approaches to critical analysis of key issues and concepts raised in the course while they interacted on the board.

The study was guided by the following overarching research question:

As they interacted on the discussion board, how did students use the resources of the board to support their learning?

Sub-questions posed were:

1. *As they interacted on the board, how did students progress towards developing and maintaining a learning community?*
2. *What strategies did these students, as community members, use to support critical exploration of concepts and issues encountered on the course?*

There were two major limitations of this study. One was the limited time available for prolonged observation of changes in students' thinking and ways of interacting. However, the board itself allowed students more time to interact with each other, and allowed the researcher more opportunity to track changes in their ways of handling issues raised on the board and referred to later as they participated in classroom discussions. Another limitation was the fact that no provision was made to record students' interactions in small-group discussions on the board, so that some data that would shed light on the progress of students were not available to the researcher.

It must also be understood that this limited exploratory case study cannot legitimately be used to arrive at generalizations about students' response to the use of ICT in online communities intended to support learning.

Conceptual Framework

Lahiff and Webb (2000) identify the following characteristics of a virtual learning community: such a community is constituted by a group of persons striving to become expert in a given domain, and maintaining long-term relationships in order to attain goals, perform tasks, and solve problems considered important to the community. The community is a place where people learn, through group activity, to define group problems, to develop methods for dealing with them, and to decide and act upon solutions. In the process, they learn new knowledge and skills. This process occurs in an online milieu, which is not necessarily bounded by location or geographical proximity, and which is inclusive of social difference as well as sameness. Thomsen, Straubhaar, and Bolyard (1998) note that online groups are sometimes considered to be too ephemeral to warrant the label "community." Säljö (1999) notes that the context in which virtual

learning communities operate establishes certain conditions which are identified as contributing to effective learning in sociocultural theory: learning is characterized by collaboration, shared meanings, problem solving, discovering and exploring dissonance among ideas, and agreeing on statements or applications of newly constructed meaning. Sociocultural theory conceptualizes learning and understanding as inherently social—how people appropriate and master tools for thinking and acting that exist in a given culture or society is critical to their conceptual development.

An effective learning process is necessary to enhance students' ability to engage in critical thinking, which involves the active analysis, synthesis, and application of information to unique situations (Scriven & Paul, 2004). These and other writers describe critical thinking as a reflective process that requires tolerance of ambiguity, asking questions, problem solving, and openness to multiple perspectives. Critical thinkers display readiness to question assumptions and "evidence." However, Graham, as cited in Säljö, (2001), argues that courses which attempt to teach critical and conceptual thinking do not appear to work as well outside traditional classrooms. According to Säljö, Graham suggests that the computer does not offer an adequate substitute.

Finally, Mercer's taxonomy creates a useful frame through which to analyse the discourse of learners in interaction with each other and with course concepts. Mercer (1995) has identified three main types of classroom discourse: disputational talk, characterized by disagreement and individualized decision making; cumulative talk, in which speakers build positively but uncritically on what others have said; and exploratory talk, in which speakers engage critically but constructively with each other's ideas.

Methodology

An exploratory case study was conducted of the discussion board interactions of students enrolled in the course. The sample included 25 students (19 female and 6 male), the majority with over 15 years teaching experience. Students came from various disciplinary backgrounds and had varying levels of expertise in using the technology. The class was comprised of 18 secondary school

teachers, including 1 computer science teacher, 1 nurse educator, 4 primary school teachers and administrators, and 2 early childhood educators. Students enrolled in this course were familiar with each other, having already completed three core courses in their chosen specialization. Data were collected through formal and informal semi-structured interviews with students, and participant observation of discussion board interactions. Qualitative content analysis of discussion board submissions and of the products of interaction—students' summaries of their group presentations and the coursework assignments they submitted—was also conducted.

Findings

Findings are presented under two main headings: findings about students' strategies to establish and maintain a learning community, and findings related to the development of their critical thinking processes.

Becoming a Learning Community

Students used a range of strategies to establish and maintain social relationships on the board—the attempt to personalize exchanges, for instance, is illustrated in one entry (the submission of a group presentation) which ended, "Shubh Divali!!! And Eid Mubarak from all us in Group I to you and your loved ones!"

They also shared each others' resources and expertise as this became necessary to achieve their goals of completing group projects and assigned coursework:

M: If anyone has been able to download and open up the Publication.pub file located under the topic Planning for Enactment, please email it to me, since it is not opening up when I downloaded it.

B: File attached as requested. Includes attachment.

Utilizing features of both cumulative and exploratory talk as described by Mercer (1995), students also identified and attempted to refine common understandings about pedagogical problems and issues they encountered every day, by seeking consensus on issues and using shared concepts that were collaboratively constructed to

identify new problems and areas where more needed to be known:

S: Hey, AM, I began my previous contribution to the debate by stating that I was attempting to be devil's advocate. You have cleared up your position nicely. I share most of your sentiments. The point that emanates is that the teacher must define him/her self within his environment, not only as a teacher within the c/room who must have (find) his philosophy and hold it dear to him. With the ever changing needs of learners and theory, one must, as an integral part of that philosophy, include the will to change – as you put it, to want to make a difference! But not all teachers have the will to change….

In this way, students grew less dependent on the lecturer to provide "correct answers" to issues raised, and came to depend more on one another to explore their changing understandings of different issues. Community opinion leaders also emerged, who placed new issues on the board agenda (beyond the required topics on the discussion board) and whose ideas often served as frames for further discourse on relevant issues, as happened in this instance:

P: Well, I would hold my comment on S's submission [the discussion had previously focused on the need for a communication policy] *as I feel compelled to engage discourse on another most relevant issue – the infusion of ICT into the curriculum, and its impact on teacher-student interactions.*

While interacting on the board, students also had to cope with conflict among members of the online learning communty. Within the community, cliques, tensions, and conflicts previously experienced in the physical classroom re-appeared and were sometimes exacerbated as people interacted and expressed opposing ideas or different values. Sometimes, there was open confrontation or covert animosity, as described by one student interviewed:

L: What about the DISCUSSION aspect [of work on the board] *Did that make a difference?*

B: [pauses] *I don't think so you know. Miss, I'll tell you what happened, eh...in our class people kind of stayed in little groups. And what happened*

was that people only responded to other people in their group….Even when people from one clique answered people from another group, sometimes it was [hesitates] *it got a little bit nasty. People would be making sarcastic comments.*

When such conflicts emerged, some students disengaged from the discussion. However, responsibility was also sometimes assumed by the community's opinion leaders to moderate social interactions during such occasions of conflict:

P: Well, like most marriages we have had our little tiff....Theoretically it should not be cause for alarm...that we could get past this unscathed would be truly an affirmation of our maturity and our digestion of the tenets of communication.

Some students indicated that they never really saw themselves as part of a learning community, especially if they saw the discussion board as incompatible with their preferred ways of learning and communicating:

K: Miss, you see me and the technology? That is not really my kind of thing, you know! For me, I have to deal face to face. I have to see your face and hear your voice when I ask you a question.

Two such students made only the obligatory number of entries on the board. These students consulted directly with the lecturer, via the telephone, or during office hours, on those areas of the course they found particularly challenging.

Strategies Used to Support Critical Exploration of Concepts Encountered

Analysis of board interactions suggested, and interviews with students seemed to confirm, that participation on the discussion board required increased preparation for discussion by way of reading and reflection. One student, B., said, "*You had to FOCUS! For me anyway, I found that I had to make sure I read my stuff before I went on that board. I had to think about what I wanted to say.*"

As they grappled with important concepts, students regularly shared ideas and information, and invited questions and comments about texts they had read and about their personal, practical experiences. At first, their entries often consisted

of simple narratives of classroom experience or tentative summaries of theories encountered:

R: Very open to correction Ms. L and classmates: Barnes, p. 31, on how language enters the curriculum: a) communication system of classroom and school – teacher says "stop talking, yuh making noise and disturbing us"; b) a means for learning.

As the course progressed, however, most students began to adopt a more analytical approach, comparing their own professional experiences and problem-solving strategies with those of their peers:

AM: Like many other classmates we have an IT lab that can only accommodate 13–16 students. I try to get my students to send homework online and do research....I ask the kids to make stuff at times, and their charts look better than mine!

More rarely, some students began to challenge and critique each others' assumptions, as this exchange demonstrates:

P: I feel compelled to engage discourse on another issue....It has been my experience that students are inclined to respond with greater interest when ICT is used in the delivery of instruction....[but] *they appear to be caught up in the ICT hardware...more so than in the attempt to engage their minds towards improved academic performance…..*
S: But P, I think half your work is done when you have an entire group of students with peaked interest....And there are endless possibilities with the technologies a la Piaget, Vygotsky, Wells et al ...Seymour Papert is one of the learning theorists you should look at for more insights on this issue. …..
H: I think I share your concern here, P., cuz I once showed an English class a bit of a Macbeth movie, then...asked them to select frames so they can make a power point presentation on some aspect of Macbeth. This turned out to be difficult for me, cuz they didn't finish, for they were too busy showing off what they could do with the machine.

Over time, a few students showed that they were also able to entertain multiple interpretations of their reading and professional experiences:

M: This is P's contention about equity as well. Teachers can lament these woes...but who will stand up to say, 'HOW CAN I HELP' 'WHAT CAN I DO DIFFERENTLY'? Mind you, I am not disputing that there are serious issues of poor leadership and teacher burnout, but the face of education has changed! Byers and Byers highlight this dilemma of the teacher in the classroom. Their exploration of non verbal communication in the classroom discusses this whole concept…..

At times like these, the students are clearly building on one another's ideas, or offering alternative points of view for their colleagues' consideration. The discourse features demonstrated during these exchanges could be characterized, using Mercer's taxonomy, as cumulative and/or exploratory talk.

As the discussions progressed, two students in particular could regularly be seen using theories they encountered to support increasingly abstract reasoning, as one of them demonstrates in this entry:

S: B shares with us her concerns with the use of language along a continuum from standard to dialect. The teacher and learner as individual selves come into the c/room with their own previously constructed realities which reflect individual values....B's issue is sociolinguistic, but has evoked a general learner reaction that is sociocultural – the expectations of the learners as to HOW a mixed female, TNT teacher should speak. Consider though to what extent does the physical context [a school situation] *authorize her to do so, and how has she overcome to ensure not only communication* [as opposed to 'noise' she receives as a result] *but successful, positive communication.*

Thus, it may be concluded that over the course of the semester many students did show increased ability to think critically about concepts encountered in the course.

Discussion

The changes in thinking observed as students used the discussion board were attributed by a number of the students themselves partly to their awareness that their thoughts were being made public and partly to the extra time they were now

afforded for reflection. These changes may also have owed something to students' ability to create records of and revisit their reflections about critical concepts and issues related to the course. Classroom talk is normally time bound and ephemeral. Once discussions have ended, all trace of them may be limited to a few notes jotted down by students, or to the lecturer's attempts to take those ideas and issues that seem relevant to him or her, summarize them and offer them to students as a review of what actually transpired in class. In the context of impending deadlines (end-of-semester/approaching exams, etc.), many important ideas are thus lost or glossed over. There is also little opportunity for students to return to those ideas and reflect on their application and relevance to their personal and professional experience. The discussion board was less bounded by time, and so allowed students to return to discussions at their leisure, perhaps after they had time to reflect, or after they returned to the classrooms where some of these concepts came alive. Students were thus given the opportunity to pick up the threads of their conversations and take those conversations forward, and so to reap the full benefit of belonging to a community of learners.

However, this was not equally true for all students, and the "community" was perhaps more of an imposed structure than an organic entity. Students who were technophobic or less technologically adept, and those who did not have access to computers in their homes remained on the periphery, and therefore had fewer opportunities for exploration and discussion than the others. They might even have been disadvantaged by being required to embrace modes of learning that were incompatible with their learning profiles.

The importance of the lecturer's active participation in the community was clear. While the technology helped, it was still often necessary for the lecturer to act as moderator for discussions on the board, to model how to approach issues from multiple perspectives, and to probe students' responses so as to scaffold more analytical thinking. In fact, lecturer intervention might be deemed critical, not only to guide the learning process, but also to manage social interactions, for it may validly be argued that earlier intervention by the lecturer might have helped to minimize

some of the less productive conflict that developed among members of the online community.

Worth further exploration is the issue of the interplay between the face-to-face context and the online context as a factor in shaping interactions and learning among students in courses that utilize blended learning. In this study, previously existing relationships clearly helped to shape the interactions on the discussion board, and those interactions in turn helped to shape further student interactions in the offline classroom.

The findings of the study also suggest that while discussion boards may be very effective in supporting student learning online, the boards may be seen as a support for other forms of instruction but not a substitute. Given these considerations, educators embarking for the first time on planning courses for online learning must be given adequate guidance and support in using such tools for instruction.

References

Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. London: Falmer Press.

Lahiff, A., & Webb, E. (2000). Virtual learning communities and the role of computer-mediated communication conferencing: Practices and problems. In I. McNay (Ed.), *Higher education and its communities* (pp. 167–183). Buckingham, UK: Society for Research in Higher Educaiton and Open University Press.

Lockwood, F., & Gooley, A. (Eds.). (2001). *Innovation in open and distance learning: Successful development of online and web-based learning*. London: Kogan Page.

McGorry, S. Y. (2003). Measuring quality in on line programs. *Internet and High Education*, 6, 159–177.

Mercer, N. (1995). *The guided construction of knowledge: Talk amongst teachers and learners*. Clevedon, UK: Multilingual Matters.

Pipitone, V., Fulantelli, G., & Allegra, M. (2004). Students' perception of e-learning: A case study. *Academic Exchange Quarterly, 8*(1). Retrieved April 22, 2007, from http://www.thefreelibrary.com/ Students+perception+on+e-learning:+a+casestudy-a0116450624.

Säljö, R. (1999) Learning as the use of tools: A sociocultural perspective on the human-technology link. In K. Littleton & P. Light (Eds.), *Learning with computers*: *Analysing productive interaction* (pp. 144–161). London: Routledge.

Scriven, M., & Paul, R. (2004). Defining critical thinking. Retrieved May 23, 2007, from http://www.criticalthinking.org/aboutCT/define_critical_thinking.cfm.

Thomsen, S. R., Straubhaar, J. D., & Bolyard, D. M. (1998). Ethnomethodology and the study of online communities: Exploring the cyber streets. *Information Research, 4*(1). Retrieved March 20, 2007, from http://informationr.net/ir/4-1/paper50.html.

PART 2

ISSUES IN CURRICULUM

Bridging the Science and Mathematics Divide: Issues, Challenges, and Promises

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Abstract. The learning of both science and mathematics represents alienating experiences for many students in the Caribbean. This must be cause for concern, since both these disciplines play pivotal roles in the growth and development of a nation. This paper puts forward the position that teachers should more closely link the two subjects in the classroom in order to bring meaning to both. We argue that since both mathematics and science teaching not only share some common learning goals—the development of a spirit of inquiry, the ability to draw conclusions based on evidence, and the ability to reason and solve problems—but also important concepts such as length, area, volume, mass, and time, that learning can be significantly enhanced through classroom practices that deliberately attempt to connect such knowledge, skills, and principles that have clear relevance to both disciplines. Issues and challenges in attempting to bridge the divide will be discussed with implications for teacher education and the associated challenges.

Introduction

> Engineers tell us that in the schools algebra is taught in one water-tight component, geometry in another, and physics in another, and that the student learns to appreciate (if ever) only very late the absolutely close connection between these different subjects, and then, if he credits the fraternity of teachers with knowing the closeness of this relation, he blames them most heartily for their unaccountably stupid way of teaching him. (Frykholm & Glasson, 2005)

The quest to link science and mathematics in teaching is nothing new. Indeed, the statement above was made over 100 years ago by an advocate of reform in school mathematics and science teaching, E. H. Moore, who was pleading for a more effective way of teaching mathematics and science, so that the important connections that existed between the two subjects could be better seen and appreciated by both teachers and students.

There is no question that there exists a large divide between science and mathematics teaching. These subjects are seen as distinctly separate in the secondary school curriculum, and are taught as such. In the primary curriculum in Jamaica, even though the approach is an integrated one for Grades 1–3, teachers still teach the disciplines in discrete ways. Yet, science and mathematics share so many common concepts and are so "integrally involved" that it seems foolhardy to continue to treat them in this way. As Carin and Sund (1985) point out, "much elementary school science activity has mathematical implications and many mathematical problems have scientific ramifications" (as cited in Berlin, 1989, p. 74). In fact, there may be benefits to be gained from capitalizing on their close relationship because Peterson et al. (1984) argue that when the disciplines are linked in a "seemingly natural way," there is potential to improve student motivation (as cited in Berlin, 1989, p. 75).

This paper is an exploratory one. Ideas are still being formed and the authors are still grappling with a number of the issues that are raised. What we are both convinced about, though, is that the time is right for an interrogation of the way in which we have traditionally approached the teaching and learning of science and mathematics. We believe that there are learning benefits to be derived from linking these two subjects more closely in both primary and secondary education, and that these must be explored with a view to not only improving the status of both subjects in Jamaica and the Caribbean, but also to change the way we educate teachers of the subjects.

Literature Review

An exploration of the literature suggests that several attempts have been made over the last 20–30 years to develop curriculum programmes that integrated science and mathematics education (Berlin, 1989). In addition, a number of United States (US) based organizations have actively fought for the integration of the two disciplines. Berlin and Lee (2005) cite many reform documents as testimony to the ongoing debate surrounding this issue. Among these are the American Association for the Advancement of Science (AAAS; 1989, 1993, 1998); National Council of Teachers of Mathematics (NCTM; 1989, 1991, 1995, 2000); and the National Research Council (NRC; 1989, 1990, 1996).

In putting forward an argument for integrated science and mathematics teaching, the AAAS (1993), in its *Benchmarks for Science Literacy,* makes a case for "a symbiotic relationship between science, mathematics, and technology":

> It is the union of science, mathematics, and technology that forms the scientific endeavor and that makes it so successful. Although each of these human enterprises has a character and history of its own, each is dependent on and reinforces the others. (as cited in Berlin & Lee, 2005, p. 16)

In fact, Strafford and Renner (1976) (as cited in Berlin, 1989) reported that the use of the Science Curriculum Improvement Study Program resulted in significant improvement in conservation of length, number, and other mathematical abilities in Grade 1 students in the US. Berlin also reports on another study using the Science-A Progress Approach (SAPA), where it was found that kindergarten children using this approach significantly improved their use of logic in problem solving, and the NCTM (2000) argues that a link between mathematics and science can inspire an approach to solving problems that readily applies to the study of mathematics (p. 66).

The need for students to experience mathematics in a context is important if the subject is to have meaning, and if students are expected to use the knowledge gained in mathematics in other contexts. One such context is science. Further,

McBride and Silverman (1991) (as cited by Douville, Pugalee, & Wallace, 2003) put forward four reasons for connecting mathematics and science:

1. Mathematics and science are closely related systems of thought.

2. Science provides concrete examples of mathematical ideas and can therefore enhance mathematics learning.

3. Mathematics can lead to deeper understanding of science concepts through quantification and explanation of relationships and recognition of patterns.

4. Science activities provide relevancy for learning mathematics. (p. 389)

In their historical analysis of the integration of science and mathematics education, Berlin and Lee (2005) also point out that there is strong philosophical support for the integration of the two disciplines as a way of enriching the learning experiences in each, and in so doing improve, not only students' understanding of the disciplines, but also their *attitude toward* each. This, in itself, seems to be adequate justification for Caribbean schools to explore more closely the issues and ramifiations of such integration.

The Integrated Jamaican Elementary School Curriculum

In this section, we describe the philosophy of the Jamaican national primary curriculum, which is an integrated one. We briefly examine the rationale and how it is organized for use.

The integration of the primary school curriculum in Jamaica is indeed reflective of what seems to be certainly an American trend. Berlin and Lee (2005) point out that integrated science and mathematics instructional activities in the US were initially designed for elementary and middle school science teachers. This, they contend, is to be expected since the integration of these subjects could be seen as easier in a context of one teacher within a "self-contained" classroom than in a context where different teachers may be required to work together to achieve this integrated approach.

The rationale for the integrated primary curriculum states:

> The…curriculum is designed to be delivered in a way that children will be able to make connections between what they learn in all subjects, and between school and the world outside. Education at this level should be a process through which children construct meaning for themselves, begin to understand the world, and to make wise choices. The integrated curriculum is therefore designed to take a more child-centred approach to teaching and learning, in an effort to empower the child to face the challenges of the new millenium. (Jamaica. Ministry of Education and Culture [MOEC], 1999, p. 10)

A major aspect of the curriculum is an integrated approach at Grades 1–3 that establishes links between subjects areas. It uses an integrated approach to learning designed to help students understand the relevance of what they learn and the relationships between different subject matter.

The curriculum is organized by Units, with two to three Units being covered in a given Term as outlined in Table 1. The Grades 1–3 curriculum is organized around the theme "Me and My Environment." Instruction is expected to have two main components: Integrated studies, which are designed to incorporate knowledge, attitudes, and skills from all the subject areas; and Windows, special time slots introduced to provide more focused attention on numeracy and literacy. This targeting of Mathematics and Language Arts is deliberate given the unacceptable levels of performance of students in these areas over the years. The total time for each window should be approximately 60 minutes daily. Among other things, the windows are to be used for introducing skills necessary for learning in particular areas of the integrated content, as well as to teach areas not in the integrated content. This suggests that there is the implicit understanding that all relevant content of the curriculum will not be developed by integration but that some amount of subject-based instruction is necessary.

Table 1. Themes and Units of the Jamaican Primary Integrated Curriculum for Grades 1–3

	Grade 1	Grade 2	Grade 3	
Theme	All About Me and My Environment			Term
Sub-Theme	M Y S E L F			
Unit 1	- Who am I?	- My body (Part II)	- My body (Part III)	
Unit 2	- My body (Part 1)	- Care and safety of self	- Satisfying other needs	1
Sub-Theme	My Home	My Family	My Community, The Nation and the Wider World	
Unit 1	- My family	- Living together as a family	- Providers and goods and services	
Unit 2	- Things in the home	- Satisfying other needs	- Relating to others outside Jamaica	2
Unit 3	_____		- Aspects of the Jamaican culture	
Sub-Theme	My School	My Community	My Physical Environment	
Unit 1	- Myself at school	- This is my community	- Living and non-living things in my environment	
Unit 2	- Together at school	- Places of interest in my community	- Caring for my environment	3
Unit 3	_____	- Plants and animals in my community	_____	

What is Integration?

As we began to discuss this concept more deeply and scoured the literature, it became clear that ideas of integration were indeed complex and that there was not a lot of consensus about how the term is interpreted. It is important, therefore, that we state quite early how we are interpreting the term for the purposes of this paper, because it is evident that this is a concept that carries very different meanings to those who use it. Some use it when referring to a thematic approach, where units are planned based on a single theme, say "Water," and each subject taught reflects something about the theme. Others use the term "interdisciplinary" in ways that suggest the ability to teach both subjects in such a way that "the treatment of content would focus on both the planning and teaching of a process that blends the quantifying aspects of mathematics with the contextual aspects of science" (Golley, 1997). We take neither position.

We use integration to mean *the linking of ideas in mathematics and science when they occur naturally in the curriculum and there is an obvious connection.* We believe that when ideas are linked in this way, there is a greater chance for students to appreciate the interconnectedness of the ideas and, consequently, a greater chance for the development of conceptual understanding of the ideas being linked. We do not believe that integration should be artificial and forced. Martin, Sexton, and Franklyn (2005) supports us in this, and suggest that the key to successful integration is not to *force* it. [emphasis in original]. In discussing the *Across the Standards Approach* to integrating aspects of the National Science Standards in the US, Martin et al. caution teachers preparing to teach integrated lessons that:

> If the links across the discipline are not evident as the lesson is being developed, do not add an extra task just to address a given discipline's stand if it doesn't fit with the rest of the lesson. (p. 261)

We are proposing that the link between the disciplines should be a conscious pedagogical strategy, that the relevant ideas should be deliberately identified, and that teachers should be trained to purposefully integrate those common

ideas. It is for this reason that we are proposing that initial teacher training must include courses that relate to this notion of integration. The ability to identify when and how integration should occur is not a skill that we can *assume* each developing teacher possesses, and we cannot leave it to chance that they will make the necessary links in their teaching, especially since this is not the typical teaching methodology adopted at any level of our educational system.

If we take an example from disciplines in Pure and Applied Science, we see that these courses—chemistry, physics, mathematics, biology—are all taught as discrete components from secondary through to tertiary levels. The "Integrated Science" curricululm is little more than one course containing a number of elements of different science disiplines. Yet, students are expected to make the link between the disciplines. Even within one discipline, students are expected to pursue both a theoretical and a practical component, and are not expected to pass the theory component unless they have been able to understand and appreciate the practical component. Students often complain that they cannot make this link. This suggests to us that this cross-fertilization of ideas must be deliberately targeted to facilitate the necessary connections.

If this then is the situation within a single discipline, how much more so it must be for two distinct disciplines such as mathematics and science, where we have been traditionally schooled to study them apart. It seems reasonable to expect that the *"bright"* teacher will make that link, but the weaker teachers will need help. In fact, research findings suggest that pre-service teachers rarely experience as learners the type of instruction that "they are expected to perform once in schools," and they believe that even though they were expected to connect mathematics and science in their teaching, "they had seldom seen or experienced such models of instruction" (Frykholm & Glasson, 2005, p. 138).

Teacher Knowledge and Skills for Integrating Mathematics and Science

Frykholm and Glasson (2005) identify four overlapping dimensions that provide a context for teachers' development of integrating mathematics and science instruction effectively:

- pedagogical content knowledge
- professional knowledge
- classroom knowledge
- academic and research knowledge

Shulman (1986) argues that teachers possess pedagogical content knowledge when they demonstrate the ability to "set teaching goals, organize a sequence of lessons into a coherent course, conduct lessons, introduce particular topics and allocate time for treatment of all significant concepts." According to Frykholm and Glasson, professional knowledge refers to knowledge about schools and curriculum passed on from experienced practitioners to young practitioners. They posit that the professional knowledge of teachers is field tested in the classroom and often shuns the academic knowledge of educational research. Classroom knowledge is the situational "craft knowledge" that teachers have of their own classroom and students.

Some of these knowledge forms will emerge as a teacher develops in his/her profession. But we believe that the attainment of pedagogical content knowledge is a mix of the training received in initial teacher training, and the extent to which teacher training courses enable the development of this "synergy" between content, context, and subject matter. Certainly, it has been our experience that trained teachers in Jamaica are ill-prepared to integrate these two disciplines. They often lack the requisite knowledge and skills required to effectively teach the disciplines in which they were trained, and, with specific reference to our "Integrated Primary Curriculum," are often hard put to use the thematic approach to do justice to the teaching of science and mathematics. In fact, some of these teachers have reported being unable to "find the science" in the curriculum. We therefore question the level of success they would have should they be required to connect these disciplines in meaningful ways, in the way that this paper is suggesting.

Implications of and Barriers to Integration

There are clearly pedagogical barriers to integration. In order for teachers to develop and use an integrated approach in mathematics and science, a significant implication is the need for them to have the kind of content knowledge that will enable them to both *recognize* when links are possible, and move easily and confidently from one discipline to the other in the areas that are being targeted for integration. Shephard (2000, p. 11) argues for the development of "robust" understandings of concepts in pre-service teachers. It is this robust understanding that will enable teachers to blend content and pedagogy to determine the most effective means to teach particular topics or problems consistent with the students' interests and abilities, thereby demonstrating their pedagogical content knowledge. This development is dependent on how teacher education is conducted. Shephard suggests that the aim of good teaching is to facilitate the transfer of concepts and the ability to make generalizations. This is facilitated by "constantly asking about old understandings in new ways [and it] calls for application and draws new connections" (p. 11). What we must recognize is that the ability to make these strong interdisciplinary connections is fundamental to effective integration practices.

Other professional knowledge barriers to integration have emerged from teachers in research conducted in the US:

- Mathematics and science classes are taught independently in teacher training programmes.

- Content in each discipline was typically fragmented, often taught in isolation from other topics that may have provided various contexts and/or connections.

- They (the teachers) were often isolated as learners of mathematics and science.

- Teachers' lacked confience in their own ability to implement connected mathematics and science instruction, largely because they felt that their content knowledge in one (or both) of these disciplines was insufficient.

In describing their understanding of integration, some of the in-service teachers enrolled in the B.Ed. programme at The University of the West Indies (UWI) had this to say:

"I don't really teach integration but since I have been exposed to it, it seems really challenging to get the content out in other areas."

"I left college before integration was done in college."

These findings suggest that the notion of integration must be addressed directly and must be revisited in teacher training and upgrading programmes.

An important point to make here is that the traditional solution to teachers' lack of subject matter competence has been to increase the number of content courses studied during teacher training. Indeed, it has been our own experience at UWI, Mona, that our content courses moved from 18 credits to 30 credits in an effort to enable greater competence in the disciplines. Yet, research findings have suggested that increasing academic coursework in science and mathematics "will not guaranteee that teachers have the specific kind of subject matter knowledge needed for teaching" (Floden, 1993, as cited in Frykholm & Glasson, 2005, p. 138). What is now being suggested is the use of "active learning opportunities in which authentic contexts provide fertile ground for understanding mathematics and science connections" (Frykholm & Glasson, p. 138).

A real barrier to integration, too, which we must not overlook, is the very culture of education in the Caribbean, one steeped in traditional ways of thinking. *Any* change—philosophical or otherwise—will meet with resistance.

Our major call, then, is for a revisiting of teacher education practices in mathematics and science education. Frykholm and Glasson (2005), citing Berlin (1991), and Berlin and White (1995), remind us that fostering the kind of strong interdisciplinary connections to which we refer, "is a challenging task for teachers and teacher educators, made all the more difficult given the paucity of research that explores what it means to integrate science and mathematics teaching" (p. 127).

Common Features of Science and Mathematics Curriculum Content

It is our belief that science and mathematics education share some common teaching goals, which should provide a pathway for effective integration of the two subjects. Included in these are the development of a spirit of inquiry; the ability to make decisions based on evidence; and the ability to reason, make conjectures, and generalize. According to Golley (1997), the development of mathematical skills, such as describing, counting, measuring, constructing, and interpreting data and graphs are essential to a student's ability to do science activities successfully (p. 27); and, further, science process skills develop habits of thinking that are important to all curricular areas, such as observing, communicating, classifying, measuring, predicting, inferring, and hypothesizing (p. 32). The development of these skills have implications for *how* both subjects are taught.

But there are as well, too, common *content* areas that should provide avenues for the enhancement of both disciplines. Common among these are concepts of measurement, data collection, probability, and even geometry. For these to be appropriately integrated, it requires much more *contextual* teaching than now occurs, and a shift from mere learning of content to application of that content in some meaningful context.

Promises

We believe that the future holds many promises for the development of mathematics and science education in the region. The 21st century mathematics and science teacher must be armed with skills that will allow the use of new and effective teaching methodologies, thereby enabling the development of meaningful and robust content knowledge in their students.

We must begin, though, with a rethinking of what teacher education in these disciplines mean, and we must actively engage in research that will help us to determine how these gaps can be addressed. We must constantly interrogate ourselves in order to determine how we can better

arm our teachers to meet the needs of our changing world.

We believe that it *is* possible to see this change. Further, we believe that we, in the Schools of Education of UWI must be leaders in this change process in the region. We at Mona are ready for this, and the Science and Mathematics Education Centre is committed to starting this process of dialogue with our colleagues in the teacher training institutions in Jamaica. We hope, therefore, that this paper has provided the seed for us at UWI to dialogue with each other in this venture, and that, together, we will see a change in the face of science and mathematics education in the Caribbean. There really is no turning back. The future of all our nations depends on this.

References

American Association for the Advancement of Science. (1989). *Project 2061. Science for all Americans: Summary.* Washington, DC: Author.

American Association for the Advancement of Science. (1993). *Benchmarks for science literacy.* New York: Oxford University Press.

American Association for the Advancement of Science. (1998). *Blueprints for reform.* New York: Oxford University Press.

Berlin, D. F. (1989). The integration of science and mathematics education: Exploring the literature. *School Science and Mathematics, 89*(1), 73–80.

Berlin, D., & Lee, H. (2005). Integrating science and mathematics education: Historical analysis. *School Science and Mathematics, 105*(1), 15–24.

Douville, P., Pugalee, D., & Wallace, J. (2003). Examining instructional practices of elementary science teachers for mathematics and literacy integration. *School Science and Mathematics, 103*(8), 388–396.

Frykholm, J., & Glasson, G. (2005). Connecting science and mathematics instruction: Pedagogical context knowledge for teachers. *School Science and Mathematics, 105*(3), 127–141.

Golley, P. (1997). *An investigation of teachers' perceptions and implementation of interdisciplinary mathematics and science.* Unpublished doctoral dissertation, Georgia State University.

Jamaica. Ministry of Education and Culture. (1999). *Revised primary curriculum: Curriculum Guide: Grade 1–3.* Kingston, Jamaica: Author.

Martin, R., Sexton, C., & Franklyn, T. (2005). *Teaching science for all children: An inquiry approach* (4th ed.). Boston, MA: Allyn & Bacon.

National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics.* Reston, VA: Author.

National Council of Teachers of Mathematics. (1991). *Professional standards for teaching mathematics.* Reston, VA: Author.

National Council of Teachers of Mathematics. (1995). *Assessment standards for schools mathematics.* Reston, VA: Author.

National Council of Teachers of Mathematics. (2000). *Priniciples and standards for schools mathematics.* Reston, VA: Author.

National Research Council. (1989). *Everybody counts. A report to the nation on the future of mathematics education.* Washington, DC: National Academy Press.

National Research Council. (1990). *Reshaping school mathematics. A philosophy and framework for curriculum.* Washington, DC: National Academy Press.

National Research Council (1996). *National Science Education Standards.* Washington, DC: National Academy Press.

Shephard, L. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4–14.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14.

"Learning is Hard Work and Sometimes Difficult": What Pupils With Dyslexia Say About the Difficulties They Experience With Learning at Secondary School in Barbados

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Abstract. Dyslexia has been described as a lifelong burden. The validity of this view is best assessed through an examination of the qualitative judgements pupils make about their experiences of school life. Findings from a multiple case study of 16 pupils with dyslexia at two secondary schools shed light on the challenges they have with learning. The findings suggest that pupils experience difficulties with spelling, sequencing, and remembering information—these "signs" are associated with the nature of dyslexia. This paper also suggests that the teaching/learning environment and teacher pedagogy are important influences on these pupils' learning. In particular, what teachers do in the classroom and the ways they do it present difficulties for pupils with dyslexia. In conclusion, the findings endorse pupil perspective research as a viable way to inform and transform teacher pedagogy, and highlight the importance of teaching skills as a way of addressing teacher practices that act as barriers to the learning of pupils with dyslexia at secondary schools in Barbados.

Introduction

The signs displayed by pupils with dyslexia have been well documented by researchers such as T. R. Miles and E. Miles (1990), Peer (2001), Pollock and Waller (1994), and Reid (2003). These signs relate specifically to the nature of dyslexia itself, for example, problems with short-term memory, sequencing of information, spelling, and reading.

Discrepancy definitions endorsed by Goswami (2003b), T. R. Miles (1978), Snowling (2000), and Vellutino (1979) suggest that pupils with dyslexia, in spite of their sometimes high IQs, fail to acquire adequate reading skills. Many researchers and theorists debated the reasons for this for decades, but explanations were not forthcoming. New and emerging theories from neuro-constructivist research (Goswami, 2003a; Richardson, Leppanen, Pavvo, Leiwo, & Lyttinen, 2003; Wydell & Butterworth, 1999) have provided insights that might shed light on the discrepancy between IQ and reading failure. Goswami suggests that the reading failure of pupils with dyslexia might be linked to their inability to distinguish and develop an awareness of onsets and rimes. These contribute to consonant blending of sounds and syllables, and can help researchers understand why these pupils experience reading delays or a failure to read.

The Gravity of the Situation

The persistence of dyslexia into adulthood has been demonstrated in research by Bruck (1992); Elbro, Nielsen, and Petersen (1994); and Pennington, van Orden, Smith, Green, and Haith (1990). Frith (1997) argued that "dyslexia is not a disease which comes with school and goes away with adulthood…it is a life long burden" (p. 9). Within the Barbadian education context, it is therefore critical to establish how pupils perceive the challenges they experience with learning, and identify how the conditions set for learning contribute to their difficulties at the secondary school level.

The foregoing suggests that when pupils with dyslexia are not given the opportunity to realize their full academic potential, it can have deleterious effects on future career aspirations. Hellendoorn and Ruijssenaars's (2000) study of adults with dyslexia suggests that a lack of early intervention at the school level, in combination with teachers' low expectations, negatively impacted pupils' need to achieve at a high level and their self-esteem. On the other hand, family

support and high teacher expectations were associated with success in higher education and career goals. Research by Hellendoorn and Ruijssenaars further suggests that past experiences in school predicted the level of success that pupils with dyslexia experienced at the tertiary level and in their future careers.

In Barbados, early intervention is still determined by parents' knowledge and familiarity with their child's progress and stage of development in reading. The socio-economic status of the family should also be considered as it plays a pivotal role in determining who accesses private diagnostic services for dyslexia. To date, at the primary and secondary level of schooling, there is no definitive programme to identify and make "provision"; in examinations, for example, for readers and access to technology for pupils with dyslexia. What can be noted is that these pupils are likely to experience frustration if teachers remain unaware of their existence in the classroom and how to adapt their teaching to facilitate these pupils' learning. For those educators who are familiar with the signs that pupils manifest, the means to meet their learning needs can still be elusive.

Dyslexia at School

Pedagogical Issues

This study reports on the views of secondary pupils with dyslexia, and it is important to understand how dyslexia influences the learning of pupils at this level of schooling. Research by Cogan and Flecker (2004), Mortimore (2003), Peer (2001), Peer and Reid (2001], and Stowe (2001) link the problems with school work to the nature of dyslexia itself.

According to Cogan and Flecker (2004), difficulties have been identified in subject areas at secondary school, for example, in mathematics some pupils experience problems with their times tables, sequencing of numbers, and remembering formulae. In geography, directions and map work present a challenge.

In English language and literature, pupils with dyslexia find it difficult to master the reading-intensive nature of these subjects, spelling, selecting important points from passages, and articulating ideas. Other practical difficulties alluded to by Mortimore (2003) include difficulties remembering class schedules and books to be brought to school on a day-to-day basis.

When these challenges are taken into consideration, teachers' pedagogical decisions should not create additional barriers to learning.

What kinds of pedagogical issues arise when teaching pupils with dyslexia? It can be argued that one of the key issues that secondary school teachers face surrounds the kinds of strategies, decisions, and skills needed to instruct dyslexic pupils in the classroom.

What do we mean by pedagogy? Lewis and Norwich (2005) define pedagogy as the decisions, actions, and strategies employed by teachers to promote learning in the classroom. According to these researchers, pedagogy ought to be dynamic and respond to classroom situations and student needs. They suggest that "effective pedagogy is an ideal that the practicalities of classroom life may threaten or perhaps foster in unpredictable ways" (p. 7).

In this study, I suggest that a broader framework be utilized to discuss pedagogical issues. In particular, the conditions set for learning by teachers in the classroom can be included as part of the pedagogical decisions that influence the learning of all pupils in general education classrooms. Findings in this study suggest that the conditions set for learning produce additional challenges to these pupils' learning. Another aspect of pedagogy that has been implicated by pupils' responses is teacher strategies (Lewis & Norwich 2005). According to pupils' responses, teachers' approaches to teaching created additional problems apart from those associated with the nature of dyslexia itself.

The literature on teaching pupils with dyslexia has traditionally focused on multisensory approaches to teaching. These approaches were viewed as specialist oriented, and perpetuated the view that general education teachers were not "equipped" to instruct pupils with dyslexia unless they were specially trained.

Reid (2005) classifies pedagogical approaches to teaching pupils with dyslexia into four broad areas:

1. Individualized programmes – These are highly structured, for example, Alpha to Omega,

Bangor Dyslexia Teaching System, and the Hickey Multisensory Language Course. These require that teachers be specially trained before instruction can occur.

2. Support approaches and strategies – These have some features of individualized programmes but may be used selectively by teachers and can be integrated into a normal school curriculum.

3. Assisted learning techniques – These programmes place a heavy emphasis on learning from others and could involve peers and adults to model effective strategies, for example, paired reading, cued spelling, and peer tutoring.

4. Whole school approaches – Here, dyslexia is viewed as a whole school concern, and policy frameworks and early intervention are key features of this pedagogical approach. Consultancy, literacy projects, and study and thinking skill programmes are examples of whole school approaches.

Research by Lewis and Norwich (2005) seems to suggest, however, that there is a need to closely examine claims that there are groups of pupils who really do require a "specialist" and individual approach to teaching. If, for example, one accepts the argument that pupils with dyslexia are a distinct category from other peers who are poor readers, then it can be suggested that an individualized approach to teaching—separate and distinct from others in the classroom—is warranted and even justified. If, on the other hand, approaches used for these pupils can in fact be incorporated as part of a whole school approach, or seen as part of a continuum of teacher strategies, then all pupils in the classroom can benefit.

Within our own Caribbean context, whole school approaches to dyslexia and assisted learning techniques seem to offer the more attractive way for teachers to feel empowered to teach these pupils in their classrooms. However,

how these strategies will be integrated into the teachers' repertoire, the curriculum, lesson plans, and instruction time must be part of the pedagogical decisions alluded to by Lewis and Norwich (2005).

Reid's (2005) framework for whole school approaches has been called dyslexia friendly strategies (Peer & Reid, 2001) because all pupils can benefit from them. To illustrate, thinking skills, which include metacognitive training and mind mapping, are said to help pupils better organize and reduce information to facilitate its later recall. Teaching thinking skills, however, would require that teachers model such skills on a regular basis for their pupils.

In addition, study skills such as planning assignments and time management are said to help pupils complete assignments and tests within a set time frame, without feeling overwhelmed. Other accommodations that can be made for pupils with dyslexia include:

1. photocopying material to be distributed in class;

2. highlighting important pieces of information;

3. placing headings in bold to signal their importance;

4. providing pupils with a structured overview of content to be covered in the lesson.

This paper seeks to answer the question: What difficulties do pupils with dyslexia experience at secondary school in Barbados?

Methodology

The Research Strategy

This section of the paper will offer an overview of the research strategy used in the study. A multiple case study approach was utilized in the research to investigate the views of pupils with dyslexia at two secondary schools in Barbados. An overview of the case study approach is presented in Table 1.

Table 1. Case Study Approach

Cases	Setting	Data Collection Methods		
		Interviews	Observations	Documentary Evidence
16 pupils – 8 females from Mallory High and 5 males and 3 females from South West High School	Context – 2 secondary schools focus on whole class teaching and classroom interaction. Pupils' perspectives of teachers' strategies			
Age group – 11–16 years old	Boundaries – limited to whole class teaching and learning	(Site 1) Pilot Study – Three types of interviews: pair, individual, and group	Participant and non-participant observation methods were utilized	Student assignments

This research is a multiple case study (Yin, 1981), which reports the views of 16 pupils with dyslexia ages 11–16 years old at two secondary schools in Barbados. Guba and Lincoln's (1989) qualitative and constructivist frameworks were utilized in order to come to an understanding with pupils about the ways they interpret and understand their classroom experiences.

Pupils were a heterogeneous group with respect to difficulties they experienced, and therefore it is difficult to argue that they represent "typical" pupils with dyslexia. Difficulties that pupils experienced included problems with spelling, reading, writing, recall, and memory (T. R. Miles and E. Miles, 1990; Pollock and Waller, 1994; Snowling, 2000). Participation in the study was on a voluntary basis, contingent on pupils' permission and parental consent being given (Masson, 2000) to take part in the research for one term.

Data Collection Procedures

Interviews and observations were the main tools used to collect data. These were supplemented by contact summary sheets and a researcher's journal—used to manage data and cross-check pupils' responses during interviews. Narrative accounts of what took place in the classroom were kept and this was used to engage pupils in discussion.

Data Analysis

Transcripts were analysed using data reduction procedures recommended by M. B. Miles and Huberman (1994). This process involved first- and second-level coding, memoing, audit trails, display format (partially ordered meta-matrices), and interpretation of the data.

The real strength of this approach is that it allows within-case and between-case analyses to be done in the meta-matrices almost simultaneously. Investigations of what individual pupils said about their school experiences and those of the group were easily distilled and analysed for a deeper understanding of the themes that emerged.

In addition, comparisons between pupils' perspectives could also have been facilitated to see how similar experiences of school were across institutions.

Descriptive Codes

The process of data reduction was started by grounding the codes within the data. An initial set of descriptive codes was produced from a pilot study conducted during the first two weeks at Mallory High School. This approach to forming codes is called an inductive approach to data reduction (M. B. Miles & Huberman, 1994).

Table 2. Data Analysis Procedure

Procedure	Description
Descriptive Codes – first level of analysis Definition – a code is a tag or label assigned to units of meaning in a transcript	These codes emerged from the data in the pilot study and were applied to specific phrases, expressions, and paragraphs in the data
Inferential/Pattern Coding framework – first level analysis Definition – a label that identifies an emergent theme	These codes classified and reduced data in descriptive coding framework into superordinate categories based on the relationships found in descriptive codes. Assumptions were made about how these codes may be related to each other in the context of the study.
Memoing – first level analysis Definition – the theorising write up of ideas about codes and their relationships	Memos documented ideas that came to the researcher about themes that emerged and their relationship to each other as data were further reduced. This procedure was used for both descriptive and inferential/pattern coding
Partially Ordered Meta-Matrix – level two analysis Definition – charts that assemble data from several cases in a standard format	The data were further reduced to a display format across the cases and research questions asked. This would allow for further cross-case analysis to continue
Partitioning of Themes	Research questions and data in Meta-Matrix further broken down and displayed individually, to make inferences and understand how cases were influenced by any factors that emerged from themes

Inferential or Pattern Coding

The next stage of the analysis clustered the descriptive codes into larger, more abstract categories, based on inferences and assumed linkages between coded materials in the data. Inferences were informed by patterns that emerged from pupils' responses to certain questions in the transcripts; phrases and ideas were repeated sometimes and these similarities were later abstracted at a more general level.

Memos

Memos were used in two ways: 1) to document my thoughts about how data were linked to wider theoretical constructs in the literature, and 2) to keep track of patterns that emerged from ideas raised by pupils in the data. This exercise was used at the descriptive and the inferential stages of the analysis.

The Audit Trail

An audit trail was used to locate coded sections from the interviews in the main body of the transcript. It included the name of the school, name of the student, the year group that pupils were in, and a page number. This simple means of tracking data is recommended by Huberman and Miles (1994).

Partially Ordered Meta-Matrices

A partially ordered Meta-Matrix is a table that gives an overview of cases studied and data compressed in a précis format. The partially ordered meta-matrices utilized in the study marked the first attempt at understanding the linkages, patterns, and ideas that arose from the data. M. B. Miles and Huberman (1994) note that meta-matrices are "master charts [that] assemble descriptive data from each of the several cases in a standard format…the basic principle is the inclusion of all relevant data" (1994, p. 178).

Trustworthiness of Data Collected

In qualitative research, issues of trustworthiness are important to ensure the credibility of data. Checking interpretations with pupils on a regular basis was managed by using contact summary sheets to ask pupils about things that they said in previous interviews and things witnessed during observation. Recapping what took place in classrooms and previous interviews provided me with the opportunity to get their feedback on the meanings and interpretations that I gave to what was said and what took place in the classroom.

Findings

This section of the discussion will examine the difficulties that pupils experienced with learning in the classroom. As noted earlier in this paper, the origins of these challenges can be thought of in two ways: first, those associated with the nature of dyslexia; and second, difficulties related to pedagogy.

The Nature of Dyslexia at Secondary School

The findings indicate that pupils experienced difficulties in writing and reading intensive subjects like English language and literature. Word substitutions, remembering how to spell familiar words, and sounding out syllables were problems that pupils experienced in both of these subjects. For Carrie, her frustration in spelling was pronounced in subjects like English literature:

[it was difficult to have] a word in your head but you can't spell it. **MH/Carrie/Year 5/p. 33**

A similar experience was noted by Annabelle:

Well its not like I have a bad memory if I want to write something that I know is correct but I can't spell it I have to change around the answer to suit the word I can't spell. **MH/Annabelle/Year 1/p. 22**

In both of these excerpts, it is important to emphasize that pupils were confident of their ability to answer the question, but their poor spelling skills prevented them from doing so in a satisfactory manner. This is not surprising given that research by Frith (1981), Goswami (1991), T.

R. Miles (1993), and Pollock and Waller (1994) suggests that phonemic awareness is a prerequisite skill for the development of reading and spelling skills.

Turner (2001) notes that spelling in English literature is a challenge even after reading difficulties are ameliorated. They also argue that pupils are likely to view their inability to spell as evidence of a major handicap and tangible evidence of a learning difficulty.

Poor memory skills are another well-documented difficulty associated with the nature of dyslexia (T. R. Miles, 1993; Snowling, 2000). At school, Carrie noted that recalling information in a precise way was not something that she could do easily:

Q: What subjects are you confident about?

Carrie: Chemistry no way [laughs] cause I guess like with Chemistry you have to learn things off by heart. I hate learning things off by heart. **MH/Carrie/Year 5/ p. 35**

Carrie's difficulty with learning information by rote is not surprising. Rote memorization can be cognitively challenging and a burden if the information is too pedestrian and if the student is unable to devise a strategy to correctly remember the information.

Lynn and Sue's comments revealed difficulties with sequencing of information. Lynn experienced difficulties with formulas, especially putting numbers in their correct order for measuring the gradients of mountains in geography:

Q: Why is calculation more difficult than writing down the formula?

Lynn: Remembering the formula is different cause I can tell you how to do it, then when I put the numbers into the formula its gonna mess me up. **MH/Lynn/ Year 4/ p. 71**

Lynn's difficulties were more procedural in that she found it harder to remember the sequence of numbers for formulas and the steps for putting this information down correctly.

Sue also had similar difficulties with sequencing, but these were related to remembering her times tables for an equation she needed to figure out in mathematics:

Q: Do you have problems remembering your times tables?

Sue: Yes

Q: So is this what made this calculation hard?

Sue: Yes.

Q: At the board you seemed to have had some problems doing the calculation?

*Sue: I forgot to cancel down and had to erase it...but the experience was okay. **MHSue//Year 3/p. 30***

Mortimore (2003) suggests that for pupils with dyslexia, times tables and following a set of mathematical steps, as Sue had to do, is a problem likely to affect pupils' self-esteem because they are likely to struggle with things that seem automatic for other pupils in the classroom. Although I did not witness pupils in the study being belittled by their peers in light of their difficulties, the focus group interview, which was conducted prior to undertaking data collection as part of the larger PhD study, revealed that such events were not uncommon.

Q: Why somebody like you, why is it that somebody else who is good can't help you?

*Dawn: Because they wouldn't understand where you are coming from...they would say you don't understand that? **MH/Dawn/Year 4/p. 3***

*Lynn: some of them would be like, Lynn is dumb let me help her, you know they have that sort of attitude. **MH/Lynn/Year 4/p. 2***

These comments add another dimension to the challenges that pupils encounter because they are not likely to approach peers if it means that they will be ridiculed. They are likely to seek out alliances with other pupils with learning difficulties to provide a source of comfort and support. The excerpt reveals that the nature of social interaction in this classroom was not always conducive to supporting the learning of pupils with dyslexia. This suggests that there is a need for awareness among peers in the classroom about how they can positively facilitate the learning of their classmates with dyslexia.

Difficulties Related to Pedagogy

What do teachers do that present challenges for pupils with dyslexia? The findings indicated that teachers' choice of strategy contributed to the challenges that pupils experienced with their learning. From my observations in classrooms, it was evident that a considerable amount of time was devoted to copious notetaking in some subjects. Dictation, however, presented a number of challenges for pupils: holding words and phrases in mind, thinking about getting the spelling correct, and choosing relevant information to note down.

Natalie expressed this sentiment well:

Q: Okay let's look at the dictation today and what did you think of that kind of instruction particularly when there are words that are difficult to spell, what did you think about that today?

*Natalie: I don't really like dictation, am its sort of hard to spell the words and remember them and also am, go back over it you forget and you go like "oh, should I go back over it or forget." I guess it was okay today cause she actually slowed down a bit and actually spelt the words. **SWH/Natalie/Year 3/p. 51***

Turner (2001) and Pollock and Waller (1994) argue that dictation is not the best method to use with these pupils in the classroom. They note that "many dyslexic children do not absorb any of the content as they are so busy dealing with the actual process of holding the words in their memories, spelling and writing" (Turner, 2001). In addition, Charlene and Lynn's comments about writing down the relevant points of the lecture are also pertinent concerns, especially when revising for examinations.

Charlene's comments give some insight regarding the cues she looked for in order to determine what is important to note down during the teachers' instruction in English literature class:

Q: What do you think is the best way to write notes and what the important points are?

Charlene: I guess how she saids it, if she talking and says head up so and so and stuff so I can know whatever, continue and then she...instead of talking, talking, talking and you have to write,

that does get us messed up. **MH/Charlene/Year 4/p. 55**

These comments indicate that the cues ranged from the precarious—intonation of teachers' voice to see where she places emphasis; to the certain—a clear indication given when the teacher says "head up" or gives subheadings to be noted down. Without these cues, Charlene is lost as far as writing the important points, because it is difficult to navigate through what seems to be an "endless sea of words."

Another area of concern related to difficulties pupils experienced with understanding concepts and their interrelationships. Knowing how and why teachers arrived at particular answers in subjects like mathematics and geography made engagement with these subjects more difficult.

Nichole's comments clearly demonstrate this point:

Q: Do you think that in some way you could see where he was going?

Nichole: I could see what he was talking about and showing and what he was trying to get at. But sometimes it is difficult to grasp even though...say in Maths like you can see oh how he got the answer but you still don't understand why its there. **SWH/Nichole/Year 3/ p. 29**

Nichole might only have partially understood the concepts and this presented a difficulty with following the teacher's line of reasoning.

Comments by Margaret suggested that she found it difficult to understand certain topics in biology, especially when she had to relate it to information that she had encountered the previous term. She referred to her experience as one that *"throw me all about.*

Q: What is it that you think you are not understanding?

Margaret: Everything.

Q: Like topics?

Margaret: Yes like certain topics I don't understand, like today she gave a ... on the board and from....and that throw me all about and it was like so why is it not this anymore, and then she is like why is it that we haven't learnt anything, like its not understanding. **MH/Margaret/Year 5/ p. 37**

Clearly, Margaret's comments reveal a need for greater attention to be paid to how teachers proceed with new information and concepts, especially during the beginning of the school term and perhaps even the academic year.

Both of these pupils seem to have understood concepts independently instead of as part of an integrated whole. Ritchie (2001) notes that "if [dyslexic pupils] find it harder to understand the links between ideas [in science] their learning can be more of a patch work of concepts that may never link up" (p. 56).

Conclusion

The findings in this paper suggest that teachers' pedagogical approaches, in particular the strategies they use to teach in the classroom, are important elements in helping pupils with dyslexia learn and negotiate challenges to their learning. The conditions set for learning should enable pupils to rise above the challenges they experience with dyslexia rather than add to them. In light of this, it is important that teachers review their use of dictation, and how they seek to facilitate understanding of concepts and their interrelationships to these pupils.

Within the Barbadian context, pupil perspective research can give teachers the leverage they need to really positively influence the learning of pupils with dyslexia. What pupils say about what teachers do and the ways they do it can be viewed as valuable data to inform pedagogical decisions. In particular, what is to be learnt and approaches teachers can use to promote the learning of dyslexic pupils in the classroom can provide indigenous solutions, which best fit the individual needs of secondary school pupils in Barbadian classrooms.

At the secondary school level, Peer (2001) argues that subject teachers ought not to exempt themselves from the responsibility of helping pupils with dyslexia participate in different subjects and access the curriculum. Knowing how pedagogical decisions facilitate or hinder the learning of their pupils can give pupils with dyslexia greater access to information across different subject areas. This is a first step to actually helping teachers become responsible for these pupils' learning.

Teaching study and thinking skills is another way that teachers can help pupils deal with the difficulties associated with the nature of dyslexia. In addition, this kind of training should help pupils correct other deficient or ineffective skills so as to improve their ability to do well in academic subjects. Clark and Uhry (1995) argue that teachers should use direct instruction to teach thinking and study skills because it is difficult for pupils with dyslexia to develop these skills on their own.

Other questions raised by this research and in need of further investigation concern the kind of classroom climate and contextual factors that might have played a part in determining pupils' responses in the study. This research was conducted at two schools and, therefore, the findings relate only to these schools. However, it would be interesting to look at the experiences of pupils at other schools to see if findings would be similar to or different from those noted here.

References

Bruck, M. (1992). Persistence of dyslexics' phonological awareness deficits. *Developmental Psychology, 28*, 874–886.

Clark, D., & Uhry, J. (1995). *Dyslexia: Theory and practice of remedial instruction.* Baltimore, MD: York.

Cogan, J., & Flecker, M. (2004). *Dyslexia in secondary school: A practical handbook for teachers, parents and students*. London: Whurr.

Elbro, C., Nielsen, I., & Petersen, D. K. (1994). Dyslexia in adults: Evidence for deficits in non-word reading and in the phonological representation of lexical items. *Annals of Dyslexia, 44*(1), 203–226.

Flutter, J., & Rudduck, J. (2004). *Consulting pupils: What's in it for schools?* London: Routledge Falmer.

Frith, U. (1981). *Cognitive processes in spelling*. London: Academic Press.

Frith, U. (1997). Brain, mind and behaviour in dyslexia. In C. Hulme & M. Snowling (Eds.), *Dyslexia: Biology, cognition and intervention* (pp. 1–19). London: Whurr.

Goswami, U. (1991). Recent work on reading and spelling development. In M. Snowling & M. Thompson (Eds.), Dyslexia: *Integrating theory and practice* (pp. 108–121). London: Whurr.

Goswami, U. (2003a). Phonology, learning to read and dyslexia: A cross-linguistic analysis. In V. Csepe (Ed.), *Dyslexia: Different brain, different behaviour* (pp. 1–40). New York: Kluwer Academic.

Goswami, U. (2003b). Why theories about developmental dyslexia require developmental designs. *Trends in Cognitive Science, 7*, 534–554.

Guba, E., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.

Hellendoorn, J. & Ruijssenaars, W. (2000). Personal experiences and adjustment of Dutch adults with dyslexia. *Remedial and Special Education, 21*(4), 227– 239.

Huberman, A .M., & Miles, M. B. (1994). Data management and analysis methods. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 90–171). Thousand Oaks, CA: Sage.

Lewis, A., & Norwich, B. (2005). *Special teaching for special children? Pedagogies for inclusion.* Buckingham, UK: Open University Press.

Masson, J. (2000). Researching children's perspectives: Legal issues. In A. Lewis & L. Lindsay (Eds.), *Researching children's perspectives* (pp. 35–45). Buckingham, UK: Open University Press.

Miles, M. B., & Huberman, A. M. (1994). *An expanded sourcebook: Qualitative data analysis* (2nd ed.). Thousand Oaks, CA, Sage.

Miles, T. R. (1978). *Understanding dyslexia*. London: Prior Press.

Miles, T. R. (1993). *Dyslexia: The pattern of difficulties* (2nd ed.). London: Whurr.

Miles, T. R., & Miles, E. (1990). *Dyslexia: A hundred years on*. Buckingham, UK: Open University Press.

Mortimore, T. (2003). *Dyslexia and learning style: A practitioners handbook*. London: Whurr .

Peer, L. (2001). Dyslexia and its manifestations in the secondary school. In L. Peer & G. Reid (Eds.), *Dyslexia: Successful inclusion in the secondary school* (pp. 1–9). London: David Fulton.

Peer, L., & Reid, G. (Eds.). (2001). *Dyslexia: Successful inclusion in the secondary school.* London: David Fulton.

Pennington, B. F., van Orden, G. C., Smith, S. D., Green, P. A., & Haith, M. M. (1990). Phonological processing skills and deficits in adult dyslexics. *Child Development, 61*(6), 1753–1778.

Pollock, J., & Waller, E. (1994). *Day-to-day dyslexia in the classroom*. London: Routledge.

Reid, G. (2003). *Dyslexia: A practitioner's handbook.* (3rd ed.). West Sussex: Wiley.

Reid, G. (2005). Dyslexia. In A. Lewis & B. Norwich (Eds.), *Special teaching for special children? Pedagogies for inclusion* (pp. 138–149). Buckingham, UK: Open University Press.

Richardson, U., Leppanen, P., Paavo, H. T., Leiwo, M., & Lyytinen, H. (2003). Speech perception of infants with high familial risk for dyslexia differ at the age of six months. *Developmental Neuropsychology 23*, 385–397.

Ritchie, R. (2001). Science. In B. Carpenter, R. Ashdown, & K. Bovair (Eds.), *Enabling access: Effective teaching and learning for pupils with learning difficulties* (pp. 52–65). London: David Fulton.

Snowling, M. J. (2000). *Dyslexia* (2nd ed.). Oxford: Blackwell.

Stowe, C. M. (2001). *How to reach and teach students with dyslexia: Practical strategies and activities for helping students with dyslexia*. West Nyack, NY: Centre for Applied Research in Education.

Turner, E. (2001). Dyslexia and English. In L. Peer & G. Reid (Eds.), *Dyslexia – Successful inclusion in the secondary school* (pp. 64–71). London: David Fulton

Vellutino, F. R. (1979). *Dyslexia: Research and theory*. Cambridge, MA: MIT Press.

Wydell, T. N., & Butterworth, B. (1999). A case study of an English-Japanese bilingual with monolingual dyslexia. *Cognition, 70*(3), 273–305.

Yin, R. K. (1981). The case study as a serious research strategy. *Knowledge: Creation, Diffusion, Utilisation, 3*, 97–114.

An Error Analysis of Written Spanish Language in Secondary School Students in Trinidad

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Abstract. With the new thrust towards learning the Spanish language in Trinidad and Tobago, the need for well-equipped Spanish teachers who are aware and capable of dealing with the problems faced by the student becomes evident. This paper attempts to make some headway in this under-investigated area. It analyses the grammatical errors in agreement of 35 students from two secondary schools in Trinidad. It uses, principally, the work of Fernández for its grammatical classification and explanations, and interprets the data both quantitatively and qualitatively. The investigation shows that errors in agreement form almost 50% of all errors produced by the language learner. The paper reveals that despite the different levels of academic performance associated with the schools, difficulties in the aforementioned area are common to both. Finally, it attempts to sensitize educators to these areas so that Spanish language education in the secondary school can be more effective.

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Introduction

The Government of Trinidad and Tobago is currently investing a great deal in establishing Spanish as the first official second language of the twin-island state. It is aware that competence in Spanish opens the country's markets to many new and promising business opportunities in neighbouring Latin America. So great is its desire to increase the population's competence in Spanish that, in March 2005, it created the Secretariat for the Implementation of Spanish (SIS), whose main responsibility is to facilitate Spanish learning and teaching at all levels of society. The SIS offers free Spanish classes to any citizen who wants to learn the language. The classes take place in all constituencies and at various levels. In the public school system, Spanish is the only second language taught in all secondary schools and is compulsory for the first three years at this level. There are also Spanish language pilot programmes in several primary schools. Due to this governmental thrust, it becomes even more necessary to have adequate pedagogical resources and systems in place if there is to be effective learning.

Historically, the English-speaking Caribbean has modelled its second language education programmes from the European and, of late, American systems. Trinidad and Tobago is no exception. Oftentimes, these programmes do not fully take into consideration the various needs of the Caribbean student, as it is assumed that the learner comes from a similar linguistic background and has similar experiences, perspectives, and difficulties as a European or American. We believe this may not be the case. The Caribbean learner, and in this case the Trinidadian second language learner, comes from an environment where Creoles, Standard English, and a host of other languages exist in a relatively small geographic space. Very often, neither the learner nor the instructor is aware of this situation and the possible impact it may have on his second language acquisition. Robertson (1989) writes:

> As a general rule, language education policy in the Caribbean has ignored the language skills of the learner, preferring, as it does, to assume the official standard language to be the first language of the learner. Where the creole and the major European lexical donor co-exist even the learner himself is often convinced that he is a monolingual speaker of the official standard. (p. 74)

Investigation shows that there is a wealth of information available about American and English students' Spanish language acquisition. There is little or no research for students who speak other

varieties of English and even less on the Trinidadian student. This paper attempts to make some headway in this area by doing an error analysis of 35 essays done by students in two secondary schools in Trinidad, TC and SJC. The entire study looks at grammatical errors in the essays, but for this paper, we focus on errors in agreement because it proves to be the most problematic area for the students.

We chose an error analysis as the method of investigation because it shows the students' situation as it actually is and easily highlights trouble spots. We use the Spanish grammars written by Bosque & Demonte (2000), Butt and Benjamin (1994), and Matte Bon (1999) to identify the errors, and the works by Fernández (1997) and Vázquez (1991) for classifying and explaining errors.

Error Analysis

In his article, "The Significance of Learners' Errors," Corder (1967) suggests that the process behind second language learning is very much like the one for learning the mother tongue. A child, for example, when learning his mother tongue makes several mistakes. We consider these errors to be a normal and even necessary part of the learning process. He therefore proposes that we change our perspective on how we consider errors produced by second language learners—embrace them rather than reject them. Corder suggests that we should analyse errors because they serve three purposes. The first is to help the teacher understand what stage the student is at in the learning process. The second is to help the student to gauge progress made in the language, and the third is to help the linguist to understand the mental processes at work when learning a second language.

Traditionally, it was thought that second language learner errors came from interference from the mother tongue. The error analysis method shows that not all errors come from the mother tongue, but also from a variety of mental processes that take place when the student uses the target language. The language that the learner produces is what Selinker (1972) calls the *interlanguage*. Interlanguage is neither the mother tongue (L_1) nor the target language (L_2). It is a linguistic system that is in between the two languages, and has

characteristics from the mother tongue, target language, and rules that the student invents. It shows that the student is in the process of acquiring new language. An error analysis investigates the interlanguage of a student at a given time. An error analysis:

- identifies the errors according to their context;
- classifies and describes the errors; and
- tries to explain the source of the error, be it interference from the mother tongue or otherwise.

It also uses a profile of the informants to help determine the source and explanation of the error. An error analysis encompasses *inter-* and *extra-linguistic* factors. By inter-linguistic factors, we refer to those that contribute to the production of systematic and consistent errors but are not the result of mother tongue interference. According to Richards (1989), inter-linguistic errors do not reflect the student's inability to distinguish the rules between the L_1 and L_2 but are indicative of the student's linguistic capability at a given stage. The term *extra-linguistic* refers to external factors that may cause the student to produce an error. They include tiredness, the teaching method, badly taught rules, and so on. An error analysis also considers the pragmatics of what the student produces. Corder (1981) refers to this aspect as the well *formedness* and *acceptability* of the utterances. The student may produce a sentence that is perfectly grammatically correct with good vocabulary but very inappropriate for the context.

Methodology

The Corpus

Our corpus consists of 35 essays from two secondary schools in Trinidad: namely St. Joseph's Convent, St. Joseph (SJC) and Toco Composite School (TC). We got 25 essays from SJC and 10 from TC. We chose the composition as the basis for our research because we think that it allows spontaneous language from the students. The essay also provides the opportunity for a more global perspective on the errors produced and hence helps when we have to determine the reason for an error.

The essay topic is "Lo que me gusta de mi pais," and was selected because it is of interest to them and allows them to write freely. The students wrote the essays sometime between September and December 2005. They had to write it in a normal 40-minute period and its purpose was explained only after they had written it. This was done to reduce the level of inhibition they might have felt knowing that an unknown person was going to read and analyse their writing.

In addition to the essay, the students also had to fill out a questionnaire in English. The questionnaire was designed to get background information on the students and to see if any variables such as contact with the target language or other foreign language had any influence on the students' writing (See Appendix A for the questionnaire).

Students' Profile

The material being investigated came from students who were preparing for the Caribbean Examinations Council (CXC) exams. Those from SJC were in Form 4 while the TC students were in Form 5. Spanish is an optional subject in both schools. The students, however, came from two quite distinct schools. SJC is a Catholic institute for girls located in an urbanized area. It has a long history in foreign language education (Spanish and French) and, in fact, a foreign language is compulsory at CXC. The school is known for its academic success and is considered one of the "prestigious schools" in Trinidad. On the other hand, TC is a rural, co-educational school with no religious affiliation. The school is more known for its emphasis on and success in sports rather than for its academic prowess.

These differences between the schools are seen through the content and quality of the essays; facts that are supported by the information provided in the questionnaires. We thought that these differences are precisely what would make an interesting study—to see whether, in spite of their differences, there are common errors.

Findings from the Questionnaire

For this section, we concentrate on students' motivation behind studying the language, and their contact with the target language and any other contact they may have had with other foreign languages.

The questionnaire revealed that motivation for studying Spanish was quite high, with 60% of them believing that the language presents advantages for them in their future career. Their high motivation augurs well for their language production and the quality of their essay.

A total of 70% of the students said that they had contact of varying degrees with Spanish outside of the classroom. There was also a surprisingly high percentage of students who had contact with foreign languages other than Spanish. They all came from SJC where French and Hindi were the dominant languages. A total of 45.8% of the students claimed that they had contact with Hindi outside of the classroom.

With respect to the study of other foreign languages, the two schools differ greatly. SJC shows that 83% of the students had studied another foreign language (generally French), and there were cases of students having studied Arabic, German, and Japanese. On the other hand, only one student in TC had ever studied another foreign language. All this information gives us an indication of the possible awareness of and sensitivity to other languages and the possible influence it may have when the students write in Spanish.

Error Typology and Explanation

Error Typology

In this error analysis, we concentrate on difficulties found in agreement in gender, number, and person. We draw on and adapt the grammatical categories used in Fernández (1997) for this section. The different types of errors in agreement are:

- **in gender**: *Adjective:* "**muchas** deportes"
  Determinant: "**el** estación"

- **in number**: *Noun:* "Hay **muchos centro** comerciales en mis pais"
  Adjective: "Las playas son **precioso**"
  Determinant: "**el** hombres"

- **in person**: *3rd person singular:* "roti and pelau **es** muy delicicoso"

  3rd person plural: "la gente **son** muy simpaticas"

  Other: "yo va con comer"

Error Explanation

One of the most important characteristics in an error analysis is the attempt to explain and understand the source of the error. In order to realize this error analysis, we have taken a global perspective of each essay to get an idea of the general style and capacity of the student. This helps in determining the root of the error. For our error explanation we use and adapt those employed by Fernández (1997).

Interference can be defined as an error that shows obvious influence of the L_1 or another L_2. It is important to recognize that in addition to the interference caused by the L_1/L_2 there may be other processes working at the same time to produce the error.

Hypergeneralization is the generalization and application of rules learnt in the L_2 to structures that do not require them. The learner regularizes the language system without considering the exceptions.

Influence of the dominant form: In this case, we see the indiscriminate use of certain grammatical forms because they are more commonly used or more accessible to the language learner. A good example of this would be the use of the present tense instead of the preterite due to the student's better grasp of that form.

Hypercorrection is the correction of elements where there is no need. In many cases, the error's root is in the contrasts that exist in the mother tongue but do not exist in the target language.

Neutralization occurs when the learner simplifies the oppositions in the language, for example, the use of a masculine noun instead of the feminine. It is often the result of ignorance of the rules of the L_2.

The formation of an idiosyncratic hypothesis: This occurs when a learner systematically repeats an error. The fact that it is systematic indicates that rules have been created by the student for the L_2. This phenomenon can be due to the very teaching method or the result of one of the explanations previously mentioned.

Corpus Analysis

As we have already mentioned, the entire error analysis looks at several grammatical categories in Spanish but we concentrate on concordance errors for this paper. In total, there are 458 errors in the 35 essays analysed. The majority of these errors are errors in agreement (220). The other errors in order of frequency are in sentence structure (84), prepositions (47), the article (39), relationship between sentences (20), pronouns (19), verbs (19), and paradigms (10). Figure 1 shows the number of errors found in the study according to their grammatical category.

Errors in Concordance

Agreement is by far the most problematic area and it accounts for almost half (49%) of all the errors produced in the 35 essays. Due to its significance, we thought it best to approach this aspect in three categories: number, gender, and person. Figure 2 illustrates the errors in agreement.

As we can see, agreement in gender is the most difficult area for the students with a total of 46%, followed by 39% in number and 19% in person. TC has an average of 10.7 errors per essay while SJC has an average of 4.16.

We have further divided the errors in agreement in gender into two subcategories: agreement in gender of adjectives and agreement in gender in the articles. Figure 3 clearly represents this information.
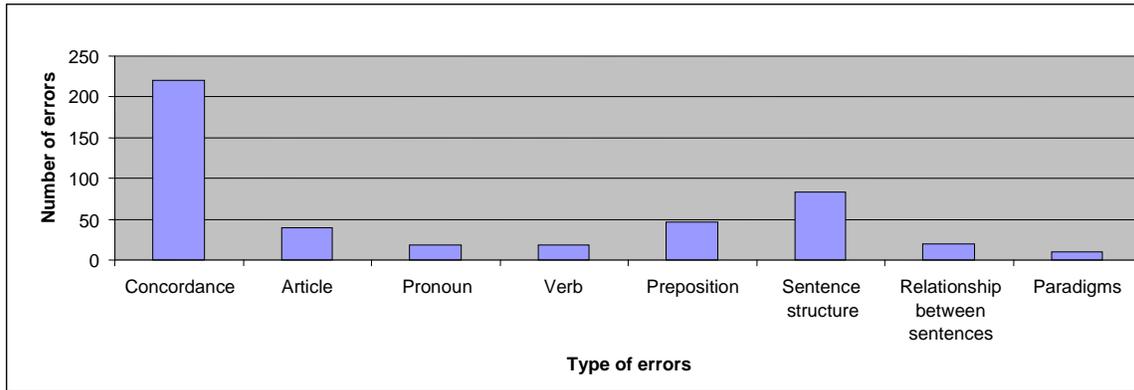
Figure 1. Graph showing the number of errors in each grammatical category**.**
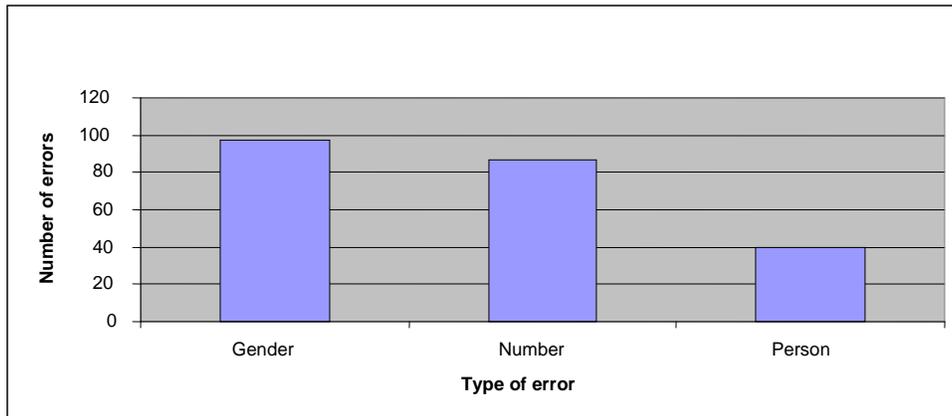
Figure 2. Errors in agreement according to subcategories.
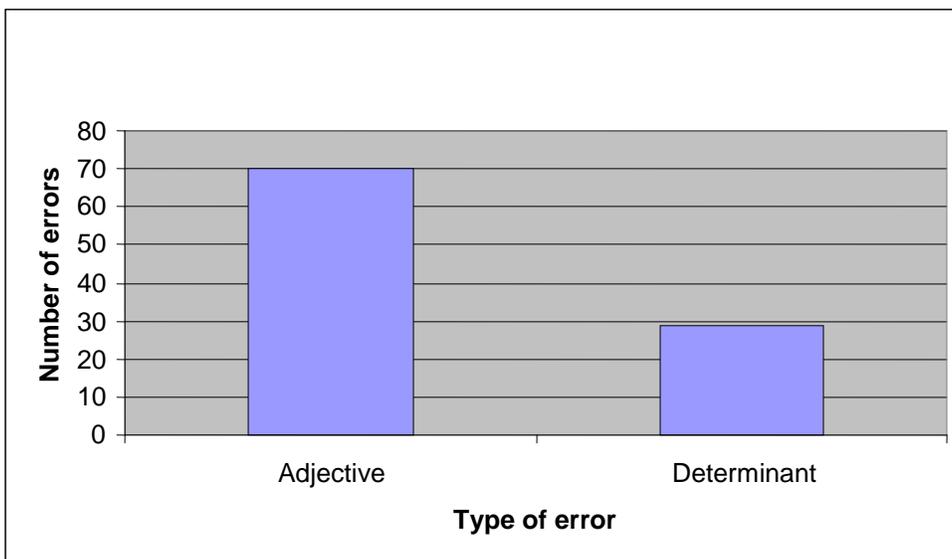
Figure 3. Errors in gender.

Agreement in gender for adjectives proves more difficult for the students than agreement in gender of the article. These errors seem to have their base in the negative influence of the L$_1$, where English does not have the concept of agreement of nouns with adjectives.

There is a general tendency in both schools to choose the masculine form of the adjective over the feminine for those nouns whose endings typically indicate that they are feminine, that is, "-a," "-sión," "-ción," and "-dad." This phenomenon could be attributed to the influence of the dominant form. The following are examples of these errors:

- Las escuela, las bibliotecas y las vecinas son **todo marvalliso** (T1)
- Trinidad es una isla muy **pequeño** (C20)
- Hay **todos** actividades hacer (C16)

In both schools, there is also a tendency to use the masculine form of *mucho* regardless of the nouns that it conditions:

- Hay **mucho** diversión en los pueblos (C24)
- Hay mucho bananas (T5)

Although the general inclination is to choose the masculine form over the feminine we have observed an interesting deviation to this trend with the adjective *bonita.* There is an extremely strong tendency in both schools, but more so in TC, to choose the feminine adjective *bonita* for all nouns in spite of the gender. Of the 10 essays studied from this school, 7 of them show evidence of this error. This could possibly be the result of the formation of an idiosyncratic hypothesis due to an error in teaching methodology and interference from the L$_1$. We think the error may reside in the very texts that students use—*Viva! Books 1–5* (Bartley, Maharaj, Moodie, & Rondon, 1999) and *School Spanish Course* (Pride, 1998)—where the word generally appears with feminine nouns and

hence reinforces the idea that this word can only be used with feminine nouns. We also have to consider that the word *bonita,* which translates to "pretty" in English, is an adjective that English speakers associate with feminine things/nouns like "girl," "woman," or "dress," which could therefore further propagate the idea that the word has only a feminine form:

- Ellos son **bonitas** (T8)
- Es un país muy turística y **bonita** (C7)

Errors in the Gender of Determinants

These errors occur with the same level of frequency in both schools, with an average of 1.25 errors in each essay. Almost all errors in gender of articles reside in those nouns that do not mark their gender in the more obvious way, that is to say, feminine nouns ending in "-a" and masculine nouns in "-o." There is general ignorance and a high level of instability in the true gender of these nouns. Again, as in the case of the adjectives, we see that the students opt for the masculine article over the feminine. The process of neutralization can explain these errors. The following are examples of these errors:

- En Tobago **el** gentes mucho amables (T10)
- Todos **los** actividades (C14)
- Hay dos estaciones, **el** estación de seca (C5)

Agreement in Number

Again, we divide this section into three separate subcategories: agreement in number for adjectives, agreement in number for nouns**,** and agreement in number for determinants. There are 87 errors in this category with an average of 4.9 errors in TC and 0.94 in SJC. It is quite clear that the greatest problem is in the agreement in number for adjectives, which accounts for more than 60% of all the errors. Figure 4 further illustrates this.
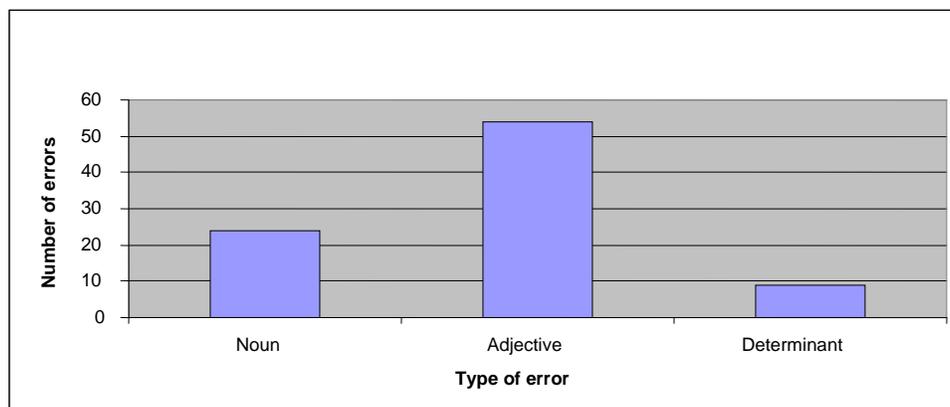
Figure 4. Errors in agreement in number.

The majority of these errors are due to neutralizing the linguistic system. It seems that the students are unaware of the parameters set in the Spanish linguistic. Both types of errors—errors in the adjective and article—appear to be due to L_1 interference. The errors are inconsistent and we can consider them to be part of what Vázquez (1991) considers the partial activation of acquired rules. For both the adjective and determinant, there is the tendency to choose the singular form for the plural noun. Again, we believe that L_1 interference hinders the proper acquisition of the rule as these are new concepts to the language learner and are non-existent in the L_1:

- **El** rios es grandes y largo (T7)
- Los personnes es muy **intelegente** y muy **lindo** (C2)

We have observed the tendency in both schools to not pluralize adjectives that end in " –oso," for example, "hermoso" and "generoso." The interesting thing is that they mark the plural form for the other adjectives in the same sentence. It is possible that these errors result in the very form of these words in English, which naturally end in "s." It could be that the students tend to ignore the need to mark the adjective morphologically because the adjective already ends in "s" in the L_1:

- las comidas culturas que son muy **delicioso** (C1)
- Las playas son **precioso** (C12)
- roti y pelau es muy **delicioso** (T2)

A significant problem is the word "gente," where there is a great deal of instability when the students have to decide whether the word is a collective or singular noun. This error is seen in both schools but with much greater frequency in SJC. We believe that this error is the result of hypercorrection due to L_1 interference. The English translation of "gente" is "people," a noun that requires the verb in plural form. The students apply the English rules to Spanish and pluralize the adjective while leaving the noun in singular form:

- La gente son muy **simpaticas** (C10)
- La comida de gente **diferentes** (T9)

However, in some cases, the students pluralize the article, noun "gente," and the corresponding adjectives:

- **Algunas gentes** en mi país es muy s**impaticos**, **intelegentes** y agradable (T6)
- **Las gentes** son muy **cosmopolitas** (C17)

In the last example, we see that hypercorrection has also affected the unchangeable adjective "cosmopolita."

With regard to the agreement in number for the nouns, we see again that the majority of the problems stem from the noun "gente," which we have already discussed and attributed to L_1 interference. However, there are cases where the error can be attributed to neutralization or even the influence of Creole. The following examples translate perfectly into the Creole:

- Me gusta todos los differentes coches y lugares, **supermercado, mercado, hospital** y hotels en mi país (T11)
- Hay dos **estación** (C4)
- Hay **terremoto** unas veces (C11)

We have also observed some particularly interesting errors coming from one student in TC, which seem to indicate that the root of the problem is not L$_1$ English interference but Creole interference. Through the following examples and the linguistic structure of the entire essay we are tempted to believe that the student is under Creole interference. These sentences are perfect calques of Creole to Spanish once these sentences are translated literally:

- Hay **mucho de escuela** (T5)
- Hay **mucho caro, banco, supermercado, centro comercial** y **cine** (T5)

Agreement in Person

In this section, we observe subject-verb agreement. There are 38 errors in total and they fall into three categories: use of the verb in the third person singular when it ought to be in the third person plural (27); the use of the verb in the third person plural when it should be in the third person singular (6); and other (5). Figure 5 illustrates this information.
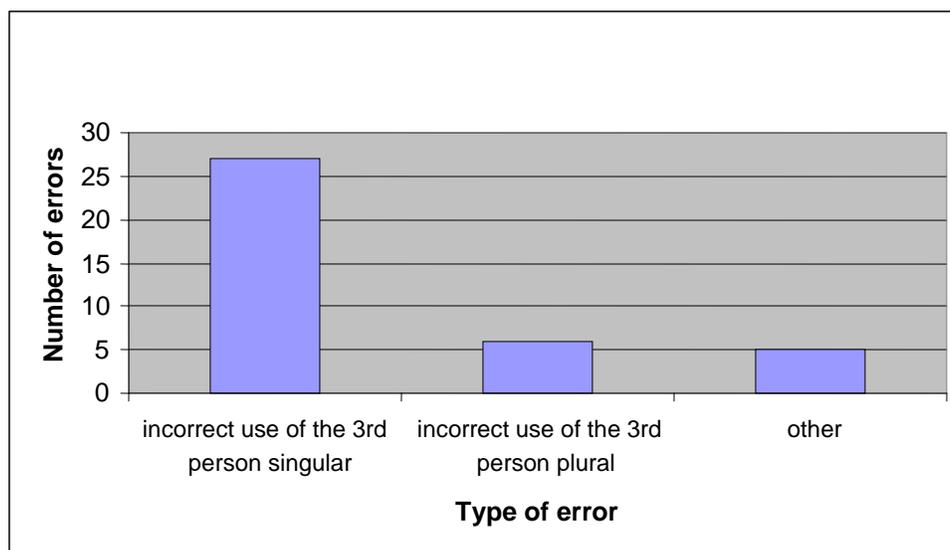
Figure 5. Errors in agreement in person.

Evidently, the tendency to choose the singular form of the verb over the plural is the greatest area of difficulty. Upon analysis, we can see that the problems are centred on two verbs: "gustar" and "ser." There are various reasons for these errors, but in the case of the verb "gustar" the majority can be attributed to neutralization. In other words, the student did not recognize the new parameters that require verb agreement. This error can be because the Spanish linguistic perspective on how one expresses likes and dislikes is different from English. In Spanish, the verb is conditioned by the object that is liked, while in English, the subject that has the "like" conditions the verb. The students believe that "me gusta" is equivalent to "I like" in English and, as a consequence, they do not see the need for object verb agreement:

- Me **gusta** las actividades (T6)
- Me **gusta** sus playas bonitas (C11)

Neutralization is not the sole cause of the errors. We also see cases where hypercorrection exists:

- Los turistas se **gustan** ir a las playas (C1)

In this case the student is making the verb agree with "playas" and not with the single action of "ir a las playas."

Regarding the constructions using the verb "ser," we see that the error can be due to either neutralization or even Creole interference, as the sentences, when translated, are perfect in Creole:

- Roti y pelau **es** muy delicioso (T2)
- Los profesores en mi pais **es** muy trabajadores (T6)
- Las calles **es** muy estrecho (C11)

In other cases, we see that the error could be the result of the distance between the subject and verb:

- Lo que me gusta de mi país **es** la playa y los rios (T4)

The second group of errors that we discovered was the use of the third person plural instead of the singular. Interestingly, all the errors in this grouping came from SJC and all involved the word "gente":

- La gente **son** muy simpaticas (C10)
- El gente de Trinidad **son** muy amables (C25)

There are only five errors in the third and last group. They show no pattern and we believe that they are simply examples of distractions or breaks in concentration while the students wrote:

- Yo va con comer (T4)
- Mi familia y yo **esperan** con ganas (C24)

Conclusion

This study reveals that the errors are consistent whether the school emphasizes the academics as in SJC or sports as in TC. Agreement in gender is by far the greatest problem faced by students. We see that learners tend to choose the masculine form over the feminine for nouns that do not end in –o or –a. The students seem to prefer the singular form over the plural when dealing with agreement in person and number. There is the general

tendency to simplify the Spanish linguistic system and the error explanations span the entire gamut that we proposed. The high frequency of errors in this category proves that we, as instructors, need to pay more attention to agreement in Spanish if we are to tackle this problem. If not, we may fall into the risk of having these errors fossilized.

More meaningful research must be done if we want to achieve Spanish language competence in Trinidad and Tobago. This study is not an exhaustive one but it does attempt to make some headway in Spanish language learning in Trinidad by highlighting some of the difficult areas.

References

Bartley, S., Maharaj, B., Moodie, S., & Rondón, D. (1999). *¡Viva! Book 1*. London: Addison.

Bosque, I., & Demonte, V. (Eds.). (2000*). Gramática descriptiva de la lengua Española I, II y III*. Madrid: Espasa.

Butt, J., & Benjamín, C. (1994). *A new reference grammar of modern Spanish*. London: Arnold.

Corder, S. P. (1967). The significance of learners' errors. In B. Wallace Robinette & J. Schachter (Eds.), *Second language learning. Contrastive analysis, error analysis and related aspects* (1983; pp. 163–171). An Arbor, MI: University of Michigan Press.

Corder, S. P. (1981). *Error analysis and interlanguage*. London: Oxford University Press.

Matte Bon, F. (1999). *Gramática comunicativa del español (Vols. I & II;* 2nd ed.). Madrid: Edelsa.

Pride, J. C. (1998). *School Spanish course*. London: Harper Collins.

Richards, J. C. (1989). A non-contrastive approach to error analysis. In J. C. Richards (Ed.), *Error analysis: Perspectives on second language acquisition* (pp. 172–188). New York: Longman.

Robertson, I. (1989). The Caribbean language learner: A linguistic perspective. In H. Jarvis (Ed.). *Caribbean Language Conference Inaugural Meeting: A Regional Perspective* (pp. 74–83). Port of Spain: NIHERST.

Selinker, L. (1972). Interlanguage. In B. Wallace Robinette & J. Schachter (Eds.), *Second language learning. Contrastive analysis, error analysis and related aspects* (1983; pp. 173–196). Ann Arbor, MI: University of Michigan Press.

Vazquéz, G. (1991). *Análisis de errores y aprendizaje de español como lengua extranjera*. Frankfurt am Main: Peter Lang.

Appendix A

Questionnaire

This questionnaire is intended for background research for a master's thesis on learning Spanish in secondary schools in Trinidad. Kindly answer the questions that follow as honestly as you can. All information provided is considered confidential.

Age _____   Sex _____

Form _____   School _____

1   Do you have regular contact with a language other than English outside of the classroom? Mark with an **X** the degree of contact **0** being the least and **5** being the highest.

	0	1	2	3	4	5
Spanish						
French						
Hindi						
Arabic						
Chinese						
other (specify) _____						

2   Besides Spanish, have you studied any other foreign languages?

Yes _____   No_____

If "yes", please specify.   _____

3   Have you ever been to a Spanish speaking country?

Yes _____   No_____

If "yes", please specify.   _____

What length of time?   _____

4   What contact do you have with Spanish outside of the classroom? Mark with an **X** the degree of contact, **0** being the least and **5** being the highest.

	0	1	2	3	4	5
listen to music						
read novels						
read the newspaper						
watch television						
write letters, messages, email						
speak with native speakers						

- listen to music
- read novels
- read the newspaper
- watch television
- write letters, messages, email
- speak with native speakers

5   Why did you choose to study Spanish for CXC? Mark with an **X** how much you agree to the statements below. **0** being the least and **5** being the highest.

	0	1	2	3	4	5
I think it will be useful for my career in the future.						
I want to be able to understand and participate in Spanish culture and life.						
I want to be able to make new friends and communicate with people from Spanish speaking countries						
It was one of the few options available to me for CXC.						

6 Rate your ability in Spanish in the following areas. Mark with an **X** the degree **0** being the least and **5** being the highest.

0	1	2	3	4	5

- reading
- writing
- speaking
- understanding

7 Rate the importance of the following abilities in your opinion. Mark with an **X** the degree **0** being the least and **5** being the highest.

0	1	2	3	4	5

- reading
- writing
- speaking
- understanding

8 Rate the level of difficulty you face when having to write in Spanish. Mark with an **X** the degree of difficulty, **0** being the least and **5** being the highest.

0	1	2	3	4	5

grammar
vocabulary
spelling
punctuation

Thank you for your cooperation!

Teachers' Concerns About the
CAPE Communication Studies Innovation

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Abstract. This paper examines teachers' concerns about the CAPE Communication Studies innovation. Data from two teachers were analysed using the Concerns-Based Adoption Model (CBAM), a theoretical model used to describe and explain the concerns teachers have when implementing an externally mandated educational innovation, in terms of seven developmental stages. The study utilized a qualitative case study design to elicit data. The data collected revealed that, initially, the two teachers had primarily intense self-oriented concerns—Awareness, Informational, and Personal. However, only one teacher expressed concerns, though less intensely at the impact stage—Collaboration. The teachers thus had a conglomeration of concerns but with different degrees of intensity, consistent with the published research literature in the field. Findings also revealed that a lack of administration support, ineffective workshops, and lack of a professional collaborative ethos at the school were factors that impacted on their concerns. The paper further indicates that in an effort to be relevant to teachers who are implementing educational innovations, intervention strategies to facilitate change should address the resolution of the different concerns as they emerge.

Introduction

> *Change is an exercise in pursuing meaning*. (Fullan, 1991, p. 351)

The introduction of the Caribbean Advanced Proficiency Examination (CAPE) in 1998 to the Anglophone islands was a response to the fervent need of CARICOM Education Ministries for post-secondary education reform that would not only replace the Cambridge Advanced Level (A Level) examination, but that would also be broader in its philosophical assumptions and structure and exceed its significance in the area of human resource development (Spence, 2004).

For quite some time, many educationalists argued for a post-secondary examination that was more representative of the sociocultural realities of the Caribbean. Their concern was about the lack of opportunities for students to pursue a course of post-secondary examinations that was responsive to the developmental needs of the region (Griffith, 1999).

Caribbean stakeholders have long recognized that the Cambridge A Level examinations, which dominated the education scene as providers of post-secondary certification, suffered from a number of weaknesses (Worrell, 2002). Educators

at both the secondary and tertiary levels posited that students emerging from the A Level programmes offered by the Cambridge and London Examination syndicates often lacked the skills that would be helpful for them in later life, because the A Level syllabus did not meet their needs and interests. Their main contention with the A Level programme was that it was limited because it demarcated subjects narrowly into academic and technical. Students who were not provided for within the A Level programmes often moved into technical and vocational programmes of dubious quality offered by institutions outside the formal educational system (Worrell).

The mission of the CAPE curriculum is therefore to encapsulate, in a documented form, the enormity of the region's cultural diversity, cultural experiences, and cultural identities. A major focus of the curriculum is the acknowledgement that the region possesses authentic and culturally pertinent information that deservedly needs to be recognized, respected, and examined. Communication Studies is one of the core CAPE units—the other being Caribbean Studies—that replaced the General Certificate of Education (GCE) General Paper.

Communication Studies provides students with the opportunity to respond creatively to implied

challenges through the development of their communicative awareness and abilities. The placing of language in this context emphasizes the nature of language as a unique marker of personal, cultural, and national identity, as well as of social and political relationships. It focuses specifically on the development of advanced competencies in Standard English and, at the same time, attempts to develop an appreciation of the linguistic diversity of the Caribbean and the implications of this diversity for social, cultural, and economic transactions (Caribbean Examinations Council [CXC], 2004).

A teaching programme based on this syllabus must provide: (a) opportunities for students to explore, in theory and practice, the use of register, code, and style in relevant social contexts; (b) facilitation and enhancement of students' ability to gather and process information using a variety of modes and strategies; and (c) facilitation and enhancement of students' critical, creative, and aesthetic response to, and production of, language (CXC, 2004).

The CAPE design incorporated a number of innovative features. The first was that subjects were structured as units and modules (Worrell, 2002). A unit such as Communication Studies may be completed in one year of post-secondary study and the relevant examination taken. In instances where the subject consists of two units, the student may proceed to the second unit of study and examination in the next year or in a later year (Griffith, 1999). This structural arrangement provided students with a programme that allowed them flexibility in planning a course of study with as much depth and breadth as their own interest dictated.

Another feature was that the Communications Studies syllabus, like the other syllabuses, contained significant Caribbean content. This allowed students to acquire the central concepts and skills of their chosen disciplines using subject matter that "reflected the region's cultural identity, social and historical experience and developmental concerns" (Worrell, 2002, p. 100). In addition, the programmes included new approaches to assessment, which allowed the CXC to verify students as having a wider range of skills and abilities than was acknowledged within the traditional approaches to assessment (Worrell). The Communication Studies syllabus included an internal assessment component alongside the external assessment component as part of its approach to assessing students. This "has introduced, into secondary schools a mode of assessment that was the exception rather than rule." (Griffith, 1999, p. 10). It was not a feature of the Cambridge A Level examination and so was an innovation to those teachers who primarily taught A Level examination classes (Worrell). Significantly, these innovative features would require sixth form teachers involved in the new programme to make fundamental shifts in their practice.

In 2003, the Government of the Republic of Trinidad and Tobago (GORTT) introduced CAPE on a voluntary basis in secondary schools. In 2004, they agreed to the phased introduction of CAPE in at least five subject areas in secondary schools. The Government further mandated that by September 2006, all schools should commence the implementation of the CAPE curriculum in all the subject areas. As a result of this mandate, many teachers vociferously expressed their concerns about the CAPE Communications innovation. Hargreaves and Fullan (1992) assert that the teacher is the ultimate key to educational change. They are responsible for the implementation of new curricula. According to Anderson (1997), teachers are more likely to implement an innovation if their concerns are met. Any innovation itself and the institution into which it is to be incorporated are important factors. Therefore, in all effort to facilitate successful implementation it becomes important to understand and address teachers' concerns.

The Research Issue

In the past, most of the research on change took on a structural approach, identifying markers along the path to implementation: the announcement of a change effort, then the decision to adopt, and then preparation and training. The assumption was that once a new innovation or practice was introduced to the workplace through initial publicity and training, its implementation was a fait accompli (Horsley & Loucks-Horsley, 1998). However, researchers internationally are currently turning their attention to the personal dimension of change and trying to understand change in reference to the

teacher (Hall & Hord, 2001; Loucks & Pratt, 1979).

Current literature on educational and curriculum change emphasizes the significance of the people implementing change. Change is really about people and their implementation of new practices in their classrooms and schools (Hall & Hord, 2001). The human equation, therefore, is of paramount importance to educational change, so that leaders of curriculum development, and especially curriculum implementation, must realize this (Ornstein & Hunkins, 2004). Two parallel dimensions occur simultaneously in the change process—a systemic dimension and a personal (Emrick, Peterson, & Agarwala-Rogers, 1977). The personal dimension involves cognitive, behavioural, and affective changes in the change process within individual users. Too often, however, staff developers, curriculum designers, and administrators attend to the trappings of the innovation while disregarding the feelings and concerns of people (Shotsberger & Crawford, 1999). Individual teachers, however, have different kinds of concerns about their involvement with an innovation at different times (Anderson, 1997; Hall & Hord, 2001), and their concerns are vital for the successful implementation of educational and curriculum innovations (Cheung & Ng, 2000; Marsh, 1987; Shotsberger & Crawford, 1999).

The purpose of this qualitative study is to explore the concerns of two A Level teachers about CAPE Communication Studies. This study investigated two teachers' concerns by examining their feelings, perceptions, thoughts, and considerations about CAPE Communication Studies. This study is significant because teachers' feelings, preoccupation, thoughts, and consideration (concerns) about CAPE Communication Studies in Trinidad and Tobago have not been previously examined. As such, this study adds to the educational literature and the local knowledge base on the issue.

The research questions for this study are outlined in the form of a grand tour question followed by sub-research questions (Miles & Huberman, 1994).

Grand Tour Question

What are teachers' concerns about the implementation of CAPE Communication Studies?

Sub-Questions

Given the Concerns-Based Adoption Model (CBAM), a theoretical model used to describe and explain the concerns teachers have when implementing an externally mandated educational innovational in terms of seven developmental stages:

1. *What are the Stages of Concern (SoC) of teachers currently implementing CAPE Communication Studies?*
2. *What do teachers suggest as factors that impact on their concerns in the change process?*

Literature Review

Teachers undergo different kinds of change while implementing educational innovations such as CAPE Communication Studies. Conceptually, they must understand the theoretical basis of the innovation and how it can be applied to real life. Change does not always happen for the best and there are often unexpected outcomes, which may lead to further innovations (Wu, 2002).

Change is uncontrollably complex since every new variable that enters the equation produces new reactions (Fullan, 2001). Moreover, each separate educational innovation is in itself multidimensional. There are at least three components or dimensions at stake in implementing any new educational programme. These include: (a) the possible use of new or revised materials, (b) the possible use of new teaching approaches, and (c) the possible alteration of beliefs. The research also shows that change has to occur in practice along the three dimensions in order for it to have a chance of affecting the outcome (Fullan). An individual teacher may implement none, one, two, or all three dimensions. Teachers could use new CAPE Communication Studies materials or technologies without altering their teaching approach, or they could use the material and alter some teaching behaviours without coming to grips with the

conception or beliefs underlying the change. Hence, the cliché that the process of implementing change is not an event but an ongoing process (Hall & Hord, 2001), during which teachers will experience different feelings and concerns with aspects of the innovation.

Several models of educational change have been developed by educational researchers to explain and facilitate the change process.

Fullan's (2001) model stresses that effective implementation depends on a combination of factors, such as the characteristics of change, the school district, the local school, and external factors—a neglect of any would hamper the change process. The change process will be less effective if one or more factors are working against implementation. Rogers (2003) contends that a change is a specialized instance of the general communication model. Rogers' model focuses on the diffusion of an innovation. Diffusion is a process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas (p. 35).

Ely's (1990) model seeks to explain the conditions for change that can help one address the deficiencies which may arise from the environment in which change is implemented. Possibly, a clear statement of commitment by top leaders is needed, or maybe more opportunity for professional development is required to help the stakeholders learn how to use their new tools (Ellsworth, 2000). Zaltman and Duncan's (1997) model focuses on strategies for planned change that can help isolate the cause of resistance to change. Reigeluth and Garfinkle's (1994) model considers the system being changed—an understanding of which may illuminate current goals for the proposed innovation and may indicate some specific issues that may emerge. This understanding is also crucial for diagnosing the system's needs and how an innovation serves or impedes them.

These educational change models are solidly grounded in empirical studies and practical applications (Ellsworth, 2000), and continue to help educators monitor the change process. However, while these models may be interrelated, they are also independent and preoccupied with different aspects of change.

The CBAM model was chosen because central to the model, unlike other models, are the concerns that the individual teachers may have during the process of change. The model seeks to understand change in reference to the teacher and postulates that because change cannot take place unless teachers change, the focus of implementation should be on the human component.

Theoretical Framework — Concerns-Based Adoption Model (CBAM)

CBAM was developed at the University of Texas's Research Center for teacher education. Members of the original team included Gene Hall, Shirley Hord, Stephen Anderson, William Rutherford, and Leslie Huling-Austin (Anderson, 1997; Hall & Hord, 1987; Hord, Rutherford, & Huling-Austin, 1987). They developed CBAM for describing the concerns that individuals may have about an innovation (Wu, 2002). CBAM has provided a framework for understanding the change process based upon (a) the role of teacher concerns and (b) the progression of teacher concerns during implementation of an innovation (Crawford, Chamblee, & Rowlett, 1998). CBAM is about the parallel process of change—the natural and developmental process that teachers go through wherever they engage in something new or different (Horsley & Loucks-Horsley, 1998). Within the context of educational innovation, the developmental framework of CBAM is built around the concept that teachers go through different stages of concern, relating to what they are worried or concerned about while being involved in a particular innovation (Wu, 2002).

Premises about educational change. Several assumptions about change in educational environments underpin CBAM (Hall & Hord, 2001):

- Change is a process, not an event.
- Change is accomplished by individuals first, then institutions.
- Change is a highly personal experience.

- Change entails developmental growth in feelings and skills about using new programmes.
- Change can be facilitated by interventions directed toward the individuals, innovations, and contexts involved.

Stages of Concern (SoC). Stages of Concern (SoC) is one dimension of CBAM for conceptualizing change in individuals. The other two dimensions are Levels of Use (LoU) and Innovation Configurations (IC). SoC describes the affective dimension of change—how people feel about doing something new, and their concerns as they engage with a new innovation at different points in its implementation (Horsley & Loucks-Horsley, 1998). It is a framework for understanding and analysing teachers' concerns pertaining to educational innovations such as CAPE Communication Studies. Three developmental dimensions—self (awareness, informational, and personal); task (management); and impact (consequence, collaboration, and refocusing)—which encompass seven distinct, but not mutually exclusive, SoCs, have been identified (Hall & Loucks, 1978):

- **0 Awareness** – Teachers have little knowledge or involvement with the innovation and are not likely to be concerned about it.

- **1 Informational** – Teachers exhibit general awareness of the innovation and interest in learning more details about it. Teachers are interested in substantive aspects of the innovation in a selfless manner, such as general characteristics, effects, and requirements for use.

- **2 Personal** – Teachers are uncertain about the demands of the innovation, their inadequacy to meet the demands, and their role with the innovation. This includes analysis of their role in relation to the reward structure of the organization, decision making, and consideration of potential conflicts with existing structures or personal commitment. At this point, they exhibit little concern about how to manage the changes in their classroom or how the changes will affect the level of student learning.

- **3 Management** – Teachers focus on implementation concerns. Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organization, management, scheduling, and time demands are the most important.

- **4 Consequence** – Teachers express concerns about the impact of the innovation on students in their immediate sphere of influence. The focus is on relevance of the innovation for students; evaluation of student outcomes, including performance and competencies; and changes needed to increase student outcomes.

- **5 Collaboration** – Teachers focus on co-ordination and cooperation with others regarding use of the innovation. They begin to seek out relationships that will assist them in implementing the innovation.

- **6 Refocusing** – Teachers focus on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. The individual has definite ideas about alternatives to the proposed or existing form of the innovation.

There is a quasi-developmental path to the concerns as a change process unfolds. However, the flow of concerns is not always guaranteed, nor does it always move in one direction. The idealized evolution does not always occur. If the innovation is appropriate, if the principal is initiating, and if the change process is carefully facilitated, then teachers will move from early self-concerns to task concerns during the first years of use, and ultimately to impact concerns after three to five years (Hall & Hord, 2001). The SoC framework therefore presents a possible, not a necessary, progression of teacher concerns about a change (Anderson, 1997).

Significantly, individual teachers can have several concerns simultaneously but there are different degrees of intensity. Generally, teachers can have a conglomeration of concerns representing several of the stages, with some more

intense than others, and some absent altogether (Hall & Hord, 2001).

Factors That Impact on Teachers' Concerns

Stages of concern do not exist in a vacuum. In fact, the stages of concern depend on the nature and situation of the teacher who is changing—whether the teacher is open to change and motivated to change. Therefore, teacher characteristics may also influence teacher concerns (Anderson, 1997).

Other research studies (Hall & Hord, 1987) demonstrate that the combination of persistent use and stage-sensitive interventions is associated with the developmental progression from self-concerns to task concerns. Innovation characteristics also have a significant impact on teachers' concerns (Anderson, 1997). The "characteristics" of a classroom innovation reflect the perceived attributes of that change among potential users in the targeted implementation setting. Depending on whether the intended users perceive it as a "good" innovation or a "bad" innovation, it can influence teacher concerns about the change (Hall & Hord, 1987). Research also postulates that pre-existing organizational linkages, such as teacher collegiality within a school, might have an influence on the development of teacher concerns during implementation of a change (Anderson, 1997; Fennell, 1992).

Open communication can move concerns out of the shadows so that they can be resolved (Janas, 1998). Hall and Hord (2001) purport that when self-concerns are more intense, several channels should be used to communicate what is coming.

Stakeholders must also be active, invested participants throughout the change process. Setting up opportunities for individuals and groups to vent concerns can be effective, since being heard is fundamental in establishing understanding and consensus (Janas, 1998). When policy makers and school personnel adopt appropriately designed concerns-based professional development delivered in logical progression, it will result in reducing teachers' resistance to change. Teachers are more likely to implement an innovation if their concerns are met during the initial phase (Vaughan, 1997).

The principal's role is critical, especially as a change facilitator, to the success of an implementation effort. When the principal makes sure that equipment and time are available for the new programme, indicate that use is indeed a priority, and provide moral support when needed, teachers can resolve management concerns. However, when this kind of support from the principal is absent, management concerns often remain high (Loucks & Pratt, 1979).

Administrators' experience in the change process and sensitivity to the needs of the teachers who are facing the change are also crucial. As teachers pass through the stages of concerns, administrators need to provide them with professional development experiences appropriate to their progress in conducting a new view of teaching (National Academy of Sciences, 2006).

Methodology

A qualitative approach was used in this study to provide insight into the phenomenon of teachers' concerns about the CAPE Communication Studies innovation. The researcher employed a purposive or purposeful sampling strategy (Patton, 1990) for the selection of participants in the study. This strategy was most appropriate since I wanted to "discover, understand and gain insights," and therefore must select a sample that is information rich in relation to the issues of central importance to the purpose of the research (Merriam, 1998, p. 61). Two cases were selected based on a selection criteria, which is essential in purposive sampling. They were targeted because they are currently implementing the CAPE Communication Studies. In addition, these teachers deliver all sections of the Communication Studies innovation and were involved in its implementation since its inception at the school. This was significant for me, because I wanted to understand the concerns of teachers over the two-year period. I chose only two teachers since studying a large number of cases limits the depth of exploration of individual cases and thus "dilute the overall analysis" (Cresswell, 1998, p. 63).

I obtained the data through audiotaped interviews, which allowed me to focus on the interviews as they were in progress, in an effort to provide more accurate transcription. The interviews were semi-structured, to allow for deeper probing in order to unleash thick, rich data about teachers' concerns about the CAPE

Communication Studies. I also kept a reflective journal in which my thoughts, views, and impressions of interviews were recorded, since it is also considered to be a form of data collection (Connelly & Clandenin, 1990). The journal proved to be useful during analysis for triangulating data and corroborating evidence found in the interviews. It threw light on the context (Denzin, 1988, as cited in Mohammed, 1996).

Analysis began with careful coding of data. We manually assigned codes to segments of the data, ensuring that the codes fit the data. This involved "taking text data or pictures, segmenting sentences (or paragraphs) or images into categories and labeling those categories with a term, often a term based in the actual language of the participants (called an in vivo term)" (Cresswell, 2003, p. 192). The coding process was used to generate patterns between the two transcripts. We looked for patterns or relationships among the codes, which enabled us to identify recurrent, salient themes. Identified themes were linked to the research questions and used to write a descriptive narrative with direct quotations to illustrate teachers' concern about CAPE Communication Studies.

Findings

The findings revealed that the teachers had experienced several stages of concern in the change process during the implementation of CAPE Communication Studies. Furthermore, the teachers had several concerns simultaneously but with different degrees of intensity.

Research Question A — Stages of Concern (SoC) of Teachers Currently Implementing CAPE Communication Studies

Prior to implementation, the teachers exhibited very little concern about the innovation because they didn't think that they would be implementing it, which implied that they were at the awareness stage of concern. However, once it was introduced to the school and the teachers had to implement it, their primary concern was to gain more information and knowledge about it, which revealed that they had relatively intense information concerns:

Oh! well to be honest I was not interested about Communication Studies in 2003 when I heard of it. I was so busy with other things. Frankly I didn't think I would be implementing it. I told myself nah this is not for me. But…when I was asked to teach it in 2004 at my school and I didn't refuse all I could think of was oh gosh! getting information about it. Information of whether it was better than what we had and what really was required for using it.

It seemed that the teachers were eager and anxious about understanding and grasping new ideas and concepts that would be needed to properly implement Communication Studies:

The first months of implementing Communication Studies one of our major focus was learning more details about it especially in relation to the characteristics and new features of the change itself. We also wanted information about the skills and theoretical ability needed. There was also great need to find out about all the content areas…this different knowledge, such as appreciation of linguistic diversity, structure of Creole and the communication process. This seemed to consume us.

During the first year of implementing Communication Studies, the teachers experienced intense personal concerns. At this stage in the change process, they felt anxiety, frustration, and even resentment about the externally imposed change that they were experiencing. Moreover, the teachers were worried about the effects of Communication Studies upon themselves personally, especially the changes that they were expected to make:

I felt a sense of anxiety, loss am loss for the old. Hymn there was this feeling of ambivalence from the old to this new thing that somehow pervaded this change…this transition I had to make. A feeling of going to something new with uncertainty of whether I can really do it and capable of these new demands required of me. It was a feeling of being shipwrecked, lost in a big ocean not knowing if I have what it takes to make it with this new thing.

For most of the first year of implementation of Communication Studies, teachers had intense self-oriented concerns—those of an informational and personal nature—where they asked the questions: *"How would the use of Communication Studies affect me?"* and *"What is it, could I get more information about it?"* Concerns during this time did not move to the task and impact stage.

However, as implementation progressed through the beginning of the second year, and teachers had more information about Communication Studies and perceived that their confidence and ability to use it had improved, new concerns emerged, which suggested that self-concerns became less intense. Of course, these self-concerns did not diminish altogether. There were still unresolved informational and personal concerns, though they were minor.

While no evidence was found in the study to suggest that teachers had task concerns during the early stages of the innovation, in the second year of the implementation the two teachers were mostly focused on time and logistics aspects of Communication Studies. They had dominant concerns about issues relating to time requirements, rushing of content, and materials and resources. As such, high management-focused concerns came to the fore:

To tell you the truth right now and since in September 2005, when Communication teachers didn't get the extra two teaching periods we pleaded for am all my thoughts seemed consumed with just trying to find a way to make the innovation work more smoothly ... am efficiently and effectively. I am really struggling to manage this...to organize things. The amount of work seems overwhelmingly and gosh the time spent doing it is never ending.

Time demands was a very strong concern since it emerged several times within the interviews of the two teachers. They vociferously complained about Communication Studies itself, especially the heavy workload involved and the inadequacy of scheduling or time considerations given. It was difficult to complete the required objectives of each module:

Oh when you take away three weeks for Christmas vacation, two weeks for Easter and the fact that students begin the CAPE programme in mid September and leave at the end of April since exams usually start the first week of May...oh! and together with five periods (45 minutes) a week, there is no way teachers can meet the 150 contact hours required for coverage of the syllabus.

The stress of rushing the modules in an effort to complete the syllabus was another major issue. Susan felt that while the syllabus has a lot of potential, time constraints force teachers to focus on coverage of selected areas of content like language awareness, contexts of communication, and evaluation of sources. Other areas, *"I rush through I just skim the surface. The areas I choose like other teachers, we hope and pray that it comes. I can never say that I am finished and feel satisfied."*

The findings also revealed that teachers' attention was focused on the insufficient provision of resources and equipment to implement the syllabus. Both teachers spoke at length about this situation:

We were promised that a range of relevant authentic texts, tools and artifacts would be available at our disposal by the second year. However, we only got about three of the relevant textbooks and a study guide. Audiotapes by eminent Caribbean performers such as "My Fair Lady" and "Oliver At Large" were acquired on our own and other crucial texts were unavailable at the bookstores.

Furthermore, the teachers were worried that multimedia resources that are needed to support the new programme are not easily available at the school, even in the second year of implementation:

CAPE teachers should have a separate room in the school fully equipped with a television, radio, video and overhead projector and at least fifteen computers. This is very necessary but instead we have to go through too much wasted time and energy of which we don't have to even get an operational television in the classroom. We need the technology for effective implementation.

The findings suggest that the teachers are still trying to cope with the struggles of the intense management stage of concern, which remains uppermost in their minds.

Additionally, there was no evidence from the data to suggest that the teachers were concerned about stage 4–Consequence, where the focus would be on the relevance of the innovation for students. Furthermore, only Joan expressed interest, though little, at the collaboration stage:

Am there are moments when I think about cooperating with other CAPE teachers to assist me in implementing the syllabus ... not just content coverage but instructional strategies as well and the acquisition of skills and knowledge from other teachers.

However, she has not actually begun to seek out relationships that will assist her in implementing Communication Studies, as "*it is difficult to meet due to the culture of isolation at the school and due to the heavy workload and time demands. In any case my efforts right now focus on just trying to basically manage this syllabus.*"

Moreover, data revealed that the teachers had no concerns regarding stage 6–Refocusing, where teachers have ideas about alternatives that could replace or be competitive with Communication Studies.

Research Question B – Factors That Impact on Teachers' Concerns in the Change Process

The data revealed that there were several factors which impacted on the teachers' concerns in the change process.

One of the most popular factors that was frequently cited by the teachers was a lack of administrative support for teachers' concerns in the change process. In fact, they spoke poignantly about their overriding sense of dissatisfaction and disappointment about this issue:

What we needed badly I remember when I first started delivery of this innovation was admin's support to help communicate the benefits of the change to us...to help us understand. They needed to set up strategies and mechanisms to help address our fears and concerns about Communication Studies. These worries...we needed admin to listen to us. We needed validation of our feelings. We needed encouragement when we felt despair...praise for trying this new thing, for not giving up but this was absent really absent.

It can therefore be garnered that moral support was important for teachers in their change effort, and could have alleviated some of their concerns; but this was not forthcoming.

As the teachers passed through the change process, they continued to voice their dissatisfaction with the lack of administration support, this time in terms of physical support. Administration did not provide the institutional climate for the use of CAPE, by providing equipment and resources:

Well as I said before I was worried especially in the second year about making things work and having enough resources and materials. But administration was unconcerned about obtaining training materials and resources for us. Even at the beginning when we needed information about Comm Studies we didn't get any reference materials or even personnel at the school to help us to alleviate our concerns. Imagine we started without any of the texts, videotapes, CD's, obtaining some at our expense. I don't understand why we have to struggle so much on our own and still today struggling to organize these things.

Time consideration for implementing the innovation was another issue that the teachers felt administration did not address and give their support:

All of us everyone of us teaching CAPE are consumed by these concerns of time, not enough time, this is the biggest fear I face...yet admin does nothing to alleviate these intense concerns. The timetable does not cater for us for Communication Studies...why don't they show greater sensitivity. Hymn they are still treating the subject like General Paper but CAPE needs to be treated with a little more respect.

Based on the data, it is clearly discernible that the lack of support by administration did not help to allay the various concerns teachers had at different junctures of the change process. Perhaps, as Susan espoused, "*if we had a strong and incredible administration whose energy is infectious and who supports the teachers through this change we could accomplish so much more.*"

Another persistent factor that the teachers repeatedly spoke about was the ineffectiveness of most CAPE Communication Studies workshops:

You know most of the workshops that I attend really ignore the different needs among teachers related to their years of experience in implementing Comm. Lets put it logically right...if one school implemented CAPE three years ago and another school implemented this year, I hardly feel that we will have similar issues to address...but whatever year you implement is one workshop for all teachers together with maybe twenty different concerns. This didn't help me when I went back to the classroom it just intensified my concerns.

The teachers seemed to insinuate that these workshops fail to fully grasp how teachers change and the change processes that teachers go through.

Lack of a professional collaborative ethos at the school was another factor that emerged, but was only supported by Joan. Member checking when the interviews were transcribed provided verification, and my reflective journal also corroborated this:

It seems that the physical structure and architecture of the school supports isolation. Segregated classrooms isolate teachers from each other...you know classroom isolation is strongly institutionalized. This makes many teachers feel that they are on their own – that implementing CAPE is an individual act. There is this structure of compartmentalization...we spend most of our working time in individual classrooms and have minimal interaction with colleagues, so in implementing this new innovation am...we are left more or less to sink or swim.

Joan further posited that the timetable also reinforces this isolation but that collaboration within the school could have better facilitated her in the change process:

I feel that collegiality is crucial in helping me overcome some of the difficulties that I experienced with Comm. You know it requires team-teaching because there are wide disparate elements to be taught. No one teacher is a specialist in all the modules. I would prefer if this was done in collaboration with other teachers but sadly the only time we get together is to set exam papers. There is no opportunity for teachers to engage in deeper questioning. Even small

increments in time to work together could have better aided me in this change.

It is evident that strong bonds among teachers and avoiding an acrimonious relationship amongst teachers, in Joan's view, were crucial to move forward despite all the hurdles faced. Unfortunately, this was absent at the school.

A lack of administration support and ineffective workshops were major factors that impacted on the teachers' concerns during the change process. Also, for one teacher, Joan, a lack of professional collaborative ethos at the school was another factor. Evidently, these factors did not help to resolve their different concerns as they emerged.

Discussion

An underlying premise of CBAM is that change is a process, not an event. The findings of this study are congruent in several ways with the existing literature on educational change and innovation, which was reviewed earlier in this paper. The findings suggested that the teachers' concerns about the implementation of CAPE Communication Studies had changed over time. At the beginning of the innovation, teachers expressed intense concerns in the area of Self-Awareness, Informational, and Personal. However, as teachers became familiar with the innovation and gained more information about it and faith in their ability to use it, their concerns shifted to intense task concerns—Management. This means that the teachers became primarily concerned about logistics and time to implement the innovation. They were predominantly concerned about an extremely extensive syllabus and consequent difficulties of time constraint, heavy workload, rushing through the material, and inadequate resources and materials. The findings also suggested that one of the teachers, Susan, did not have concerns in the realm of the impact stage. However, Joan exhibited concerns, though minimal, at the collaboration stage. The teachers therefore experienced several stages of concern, but task concerns remained major.

Generally, it seemed that as the teachers' self-concerns about CAPE Communication Studies were sufficiently resolved, though not totally diminished, they were able to move to other stages

of concern. As such, the teachers' concerns appeared recursive and developmental in nature, which is consistent with research findings in the literature, that earlier concerns must be less intense before later concerns emerge and can increase in intensity (Anderson, 1997; Hall & Hord, 1987). Additionally, in terms of the stages of concern, the teachers had a conglomeration of concerns, but with varying degrees of intensity, which is in tandem with Hall and Hord's (2001) perspective.

The literature posits that the passage of time alone does not affect teachers' stages of concerns but also a combination of other factors. International researchers (Casey and Rakes, 2002; Wells & Anderson, 1995) contend that attention to teachers' concerns, administrators' support, providing appropriate training, and other interventions can result in movement to higher intensity impact concerns. However, the data elicited from this study indicated that the change process for the teachers was not carefully facilitated. In fact, the factors that impacted on teachers' concerns, such as a lack of administrative support, ineffective workshops, and lack of a professional collaborative ethos at the school, did not help to allay their concerns as they surfaced. When teachers experienced intense self-concerns in the first year of implementing Communication Studies, administration at the school did not provide support and the workshops they attended certainly did not address these concerns. However, the teachers were able to progress from the lower stage in the continuum to a higher, intense stage, with sufficient time, experience, and acquisition of new information and skills, which they pursued individually.

Concerns-based theory contends that institutionalization of an innovation only occurs when a majority of the individuals within the target group have lowered their concerns at stages 1, 2, and 3. Hall, George, and Rutherford (1978) state that "if these early concerns remain intense, then the user is apt to modify the innovation or their use of the innovation, or perhaps discontinue use in order to reduce the intensity of these concerns" (p. 13). Based on the findings, it is evident that institutionalization of CAPE Communication Studies has not yet occurred as teachers still have intense management concerns. This may be because the teachers have only implemented the innovation for about two years. It

is remarkable, though, that during this time they were able to progress to the task stage. Particularly significant was that Joan had concerns, though low in intensity, at the impact stage. These teachers seemed to support one of the CBAM principles of change—that people go through change at different rates and in different ways. Everyone cannot be ready at the same time to implement.

It cannot be argued that teachers' lower-level concerns can progress to higher levels due to various factors (Hall & Hord, 1987). However, the findings from this study suggest that factors such as lack of administration support, ineffective workshops, and lack of a professional collaborative ethos at the school did not help to allay the teachers' different concerns as they emerged. Therefore, what is significant from this study is that perhaps holding and changing concerns can very well be an individual matter, as Casey and Rakes (2002) envisioned.

Implications for Educational Practices

A significant implication for curriculum implementation can be drawn from the findings of this study. It is important for change agents, staff developers, administrators, and teachers to recognize that teachers' stages of concern are a natural phenomenon of implementing an innovation. Teachers should not feel embarrassed or ashamed to have self-concerns about a new curriculum. Teachers' stages of concern also have implications for professional development activities. Monitoring and analysing teachers' stages of concern during the process of implementation of an innovation allow change facilitators and administrators to design intervention strategies that are stage relevant.

Constraints and Future Research

This study only focused on the present status of teachers' concerns about CAPE Communication Studies. Future research may focus on longitudinal concerns of teachers about CAPE Communication Studies. Owing to time constraints, only one school implementing CAPE Communication Studies was studied. Future research may involve more data from more schools with different backgrounds, which would provide a stronger basis for refining the propositions in this study.

Recommendations

The findings of this study have led the researcher to submit the following recommendations:

- Teachers need to understand their own developmental progression of concerns; as such, educating them about the concerns theory should be a vital aspect of teacher education programmes.

- Currently, change facilitators seem to be enamoured with short workshops based on the skills and knowledge they perceive teachers need. However, to get teachers to effectively implement a new curriculum requires a paradigm shift to long-term, continuous in-service training through workshops based on the stages of concerns theory, where teachers are not mere passive recipients.

- Administrators need to take account of the physical and moral support necessary for teachers to see change through.

- Administrators need to provide teachers with professional staff development experiences so that they can be re-educated to develop a new view of teaching and develop the skills and competencies required or implementation of an innovation.

References

Anderson, S. E. (1997). Understanding teacher change: Revisiting the Concerns Based Adoption Model. *Curriculum Inquiry*, 27(3), 331–367.

Caribbean Examinations Council. (2004). *Communication studies syllabus: Effective for teaching from May/June 2004*. St. Michael, Barbados: Author.

Casey, H. B., & Rakes, G. C. (2002). An analysis of the influence of technology training on teacher stages of concern regarding the use of instructional technology in schools. *Journal of Computing in Teacher Education, 18*(4), 124–132.

Cheung, D., & Ng, D. (2000). Teachers' stages of concern about the target-oriented curriculum. *Education Journal, 28*(1), 109–122.

Connelly, F. M., & Clandenin, D. J. (1990). Stories of experience and narrative inquiry. *Educational Researcher, 19*(5), 2–14.

Crawford, A. R., Chamblee, G. E., & Rowlett, R. J. (1998). Assessing concerns of algebra teachers during a curriculum reform: A constructivist approach. *Journal of In-service Education, 24*(2), 317–327.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: Sage.

Creswell, J. (2003). *Research design: Qualitative and quantitative approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Ellsworth, J. B. (2000). *Surviving change: A survey of educational change models.* Syracuse, NY: ERIC Clearinghouse on Information and Technology. (ERIC Reproduction Service No. ED 443 417)

Ely, D. (1990). Conditions that facilitate the implementation of educational technology innovations. *Journal of Research on Computing in Education*, 23(2), 298–305.

Emrick, J. A., Peterson, S. M., & Agarwala-Rogers, R. (1977). *Evaluation of the national diffusion network: Vol. 1. Findings and recommendations.* Menlo Park, CA: Stanford Research Institute.

Fennell, H. A. (1992). An investigation of the relationships between organizational-cultural linkages and teachers' stages of concern toward a policy implementation. *Alberta Journal of Educational Research, 38*(1), 9–26.

Fullan, M. (1991). *The new meaning of educational change.* London: Cassell.

Fullan, M. (2001). *The new meaning of educational change* (3rd ed). New York: Teachers College Press.

Griffith S. A. (1999). *The Caribbean Examinations Council: Responding to the educational needs of the region* (EFA in the Caribbean: Assessment 2000. Monograph series, no. 8). Kingston: Jamaica: UNESCO.

Hall, G. E., George, A. A., & Rutherford, W. L. (1978). *Stages of concern about the innovation: The concept, verification, and implications.* Austin, TX: Southwest Educational Development Laboratory.

Hall, G. E., & Hord, S. (1987). *Change in schools: Facilitating the process.* Albany, NY: SUNY Press.

Hall, G. E., & Hord, S. M. (2001). *Implementing change: Patterns, principles, and potholes.* Boston, MA: Allyn & Bacon.

Hall, G. E., & Loucks, S. (1978). Teacher concerns as a basis for facilitating and personalizing staff development. *Teachers College Record, 80*(1), 36–53.

Hargreaves, D. H., & Fullan, M. G. (Eds.). (1992). *Understanding teacher development.* New York: Teachers College Press.

Hord, S. M., Rutherford, W. L., Huling-Austin, L., & Hall, G. E. (1987). *Taking charge of change.* Alexandria, VA: Association for Supervision and Curriculum Development.

Horsley, D. L., & Loucks-Horsley, S. (1998). CBAM brings order to the tornado of change. *Journal of Staff Development, 19*(4), 17–20.

Janas, M. (1998). Shhhhh, the dragon is asleep and its name is resistance. *Journal of Staff Development, 19*(3), 13–16.

Loucks, S., & Pratt, H. (1979). A concerns-based approach to curriculum change. *Educational Leadership, 37*(3), 212–216.

Marsh, C. (1987). Implementation of a social studies curriculum in an Australian elementary school. *Elementary School Journal, 87*(4), 476–486.

Merriam, S. B. (1998). *Qualitative research and case study application in education.* San Francisco, CA: Wiley.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

Mohammed, J. (1996). *Career aspirations and expectations of fifth form students at a senior comprehensive school.* Unpublished doctoral dissertation, The University of the West Indies, St Augustine.

National Academy of Sciences. Center for Science, Mathematics and Engineering Education. (2006). *Inquiry and the National Science Education Standards: A guide for teaching and learning. Ch. 8. Supporting inquiry-based teaching and learning.* Washington, DC: National Academy Press. Retrieved January 13, 2006, from http://books.nap.edu/html/inquiry_addendum/ch8.html.

Ornstein, A. C., & Hunkins, F. P. (2004). *Curriculum: Foundations, principles and issues.* Boston, MA: Pearson Education.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.

Reigeluth, C., & Garfinkle, R. (1994). *Systematic change in education.* Englewood Cliffs, NJ: Educational Technology Publications.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Shotsberger, P. G., & Crawford, A. R. (1999). On the elusive nature of measuring teacher change: An examination of the Stages of Concern questionnaire. *Evaluation and Research in Education, 13*(1), 3–17.

Spence, J. (2004, March 18). Advancing with CAPE. *Daily Express,* p. 11.

Vaughan, W. E. (1997). *The effects of concerns-based professional development on teachers concerns about SchoolNet technology.* Unpublished doctoral dissertation, Miami University.

Wells, J. G., & Anderson, D. K. (1995). *Teachers' stages of concern towards Internet integration* (Report No. TAC-B-459; ERIC Document Reproduction Service No. ED 389261)

Worrell, P. (2002). Mass media and the diffusion of curriculum innovations. *Caribbean Curriculum,* 9, 91–117.

Wu, X-C. (2002). A study of teachers' concerns when implementing an innovation in Taiwan. *ELTED, 6*,19–44.

Zaltman, G., & Duncan, R. (1977). *Strategies for planned change.* New York: Wiley.

Collaborating to Reform Science Education in Context: Issues, Challenges, and Benefits

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Abstract. Within recent times, the call for collaboration among stakeholders in education is made with increasing frequency. In current thinking, community building and collaboration are posited as critical elements in school reform. The literature reveals various models for initiating collaboration. There is the model that describes the initiative for collaboration as undertaken by "researchers"/university personnel. A second model describes the perspective in which schools as organizations invite researchers to collaborate on a project. The Reforming Science Education in Context (ReSEC) project is an example of the first model. This paper reports the issues that emerged in forging collaborative relationships among two lower secondary science teachers at a selected New Sector High School in Trinidad and three members of staff from the School of Education, St. Augustine, during the period September 2005 to July 2006. It also presents the benefits and challenges associated with the process of collaboration, which aims to achieve a school-based agenda for education.

Introduction/Background

Reforming Science Education in Context (ReSEC) is a project that was developed out of an expressed need by teacher-participants attending a mini-symposium hosted by the School of Education (SOE) at the St. Augustine Campus of The University of the West Indies (UWI), which was held in February 2005. The purpose of the symposium was to discuss the findings from an investigation of the status of science education at the lower secondary level in Trinidad and Tobago, which had recently been disseminated (see George, 2003; Herbert, Rampersad, & Akinmade, 2003; Rampersad & Herbert, 2003), with key stakeholders including officials from the Ministry of Education and science teachers. The findings from the lower secondary project indicated that many schools had implemented the new national lower secondary school curriculum in science (Trinidad and Tobago. Ministry of Education, 2002), which had been developed in 2002 by the Curriculum Development Division of the Ministry of Education as part of the Secondary Education Modernization Programme (SEMP) reform thrust. Part of the discussions at the symposium focused on teachers' responses to this new curriculum in terms of its usefulness in addressing students' learning needs, in fostering inquiry and higher-order thinking skills in students, and in guiding teachers with respect to strategies for instruction and assessment. In particular, the teachers were encouraged to speak about any challenges they faced with respect to the implementation of the curriculum, and were asked to identify areas in which they needed help.

While the curriculum itself was commended by most teachers with respect to its objectives, general organization, good articulation among the levels, range of activities and assessment strategies, user-friendliness, and so forth, many of the teachers present expressed the view that they either had to "re-design the syllabus to suit the needs of [special] students," or "students with special needs seem to be left out," or that the "syllabus did not cater for the mixed-ability groups," or that they experienced difficulty in "getting weaker students to remain motivated." A few also commented that while the curriculum document suggested activities that had the potential to promote higher-order thinking skills in students, they themselves needed to "develop skills in thinking in order to pass it [sic] on or teach students." They also felt that while the newer "SEMP" schools were well-equipped, many of the existing schools had limited resources to adequately support science teaching, or to give

students the opportunity to engage in practical activities.

The teachers were facilitated in the development of individual action plans to address issues raised, and a formal offer was subsequently made by the science educators at the School of Education to the teachers and their principals, indicating willingness to collaborate on the implementation of these plans. There was no response to the offer of collaboration, either by the teachers themselves or their principals. The comments of the teachers and their action plans (copies of which were requested at the symposium), however, provided sufficient stimulus for follow-up action by the science unit at the SOE.

We believed that we could not sit idly by and do nothing when there were perceptions that education was "in crisis," and when reports indicate that a large percentage of students fail examinations each year or leave school with deficiencies in the areas of literacy and numeracy. In addition, in recent times, views expressed in the literature (see Greenwood & Levin, 2000) point to a role for the university that moves it from ivory tower status to full and complete participation with practitioner-stakeholders in society. Furthermore, developing relationships with stakeholders is one of the seven strategic objectives of the St. Augustine Campus. Accordingly, the ReSEC project was designed.

The ReSEC project was formally conceptualized at a meeting of science educators of the SOE in June 2005. The meeting was held primarily to discuss the issues raised at the mini-symposium, prioritize them in terms of their importance, and formulate a plan of action for collaborating with science teachers in the new SEMP schools to make the new curriculum more responsive to students' needs. Criteria for choice of schools, and strategies for initiating contact and inviting teachers to be part of the collaborative initiative were explored. It was envisioned that the first phase of such a collaborative project would take three years, working with teachers from Form 1 (the first year of secondary school for students between the ages of 11–13 years) and following through to Form 3.

The purpose of this paper is to report on the issues involved in initiating and implementing the preliminary phase of the ReSEC collaborative action research project. There are very few reports on the processes involved in this preliminary phase, but what exists characterizes the phase as "messy" (Bello, 2006, p. 16). Very little detail on what constitutes the "messiness" has been reported, however. This report is intended to address this deficiency.

The issues reported on in this paper emerged from the data as interpreted through the conceptual lenses/frameworks of the university participants. What emerged as issues were influenced by contextual factors such as the history of school/university relationships, the specific interactions that occurred as the project evolved, and our own personal and professional experiences.

Some Theoretical Perspectives

The literature on collaborative action research may be explored from a number of perspectives. The theoretical underpinnings that informed the study are: conceptions of collaborative action research, establishing communities of practice, social constructionism, and models of collaborative action research.

Piliouras, Kokkotas, Plakitsi, and Vlaxos (2003, p. 1) suggest that "the adjective 'collaborative' in collaborative action research stresses a research methodology that involves researching with teachers rather than conducting research on them or about them." Further, they state that underpinning their own action research study is the assumption that "teachers can acquire the expertise necessary for effective curriculum development, by refining and extending the practical professional knowledge they already possess through critical collaborative activity supported by a team of researchers" (p. 1).

Greenwood and Levin (2000) refer to the process of collaborative action research as "*co-generative inquiry*," because it is built on professional researcher-stakeholder collaboration. They make a strong case for a role for action research in connecting university social research to some of its primary social constituencies, thereby contributing to a positive restructuring of university-society relationships. In essence, they are advocating a reconceptualization of the university's agenda. Clarken (1999) identifies elements that can serve as a guide to determine

university/school readiness for collaboration and identify potential barriers to success. These are:

- trust/responsibility
- time/commitment
- accountability
- choice/ownership/meaningfulness
- shared vision/beliefs
- mutuality/reciprocity
- flexibility/adaptability
- challenge/openness to growth
- respect and communication/sensitivity

However, this reconceptualization can only be realized if participation in action research is seen as both a means of supporting research in teaching and an essential element of the research itself (Bruce & Easley, 2000).

The literature also speaks to collaboration and community building as critical elements in action research and school reform. Communities of practice have been defined as groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (Wegner, McDermott, & Snyder, 2002, p. 5). They further suggest that such communities share information, insights, and advice; ponder common issues; explore ideas; and act as sounding boards. Wegner et al. also posit that good community architecture invites three main levels of community participation. These are a "core" group who move the community along its learning goals; the "active" group that participates regularly, but without the intensity of the core group; and the peripheral group who remain on the sidelines observing, but not actively contributing. They further suggest that community members move through these levels as their interests are stirred.

The social constructionist perspective also underpins the action research paradigm. The underlying assumptions of social constructionism are that reality is constructed socially, and that meanings and knowledge are co-constructed in interaction (Shotter, 1993). Shotter posits that the social constructionist approach does not allow communication to be seen as simply a matter of information transfer and exchange, but rather as a process by which people can, in communication with one another, literally inform one another's

being. Research from this perspective focuses on communicative transaction as complex, dynamic, and context-dependent (Souza, n.d.). Beck and Kosnik (2006) see social constructionism as an approach that encourages all members of a learning community to present their ideas strongly, while remaining open to the ideas of others. Therefore, in forging a successful community, issues such as agency, knowledge, and power must be addressed.

The literature suggests that there are three types of knowledge that are each associated with different dimensions of power. These are representational knowledge, which is linked to power of competence (*power-over*, i.e., power to control); relational knowledge, linked to power of connection (*power-with*, i.e., in solidarity with others); and reflective knowledge, linked to power of confidence (*power-from-within*, i.e., power to act on moral values) (Park, 2001). Starkhawk (1987), cited in Park (2001), sees these three dimensions of power as being operative and necessary in community-based actions. However, reports in the literature are somewhat silent on these issues as experienced in practice.

Attempts at collaboration reported in the literature reveal various models for initiating collaboration. In one model, the initiative for collaboration is taken by "researchers" (see Bello, 2006; Grove & Fisher, 2006). In another, schools as organizations invite researchers to collaborate on a project (see Cooper & White, 2006). But it is evident that there are some limitations in the reporting of action research studies in education. In a critique of these studies, Grove and Fisher state that they provide an incomplete picture, with some being more descriptive than analytical, and others providing few details on the process of implementation. They also refer to the lack of clarity in research reports about the factors that lead to collaborative relationships. Bello, citing Gomez (1990), speaks to the under-reporting of the process aspect of action research. She posits that at the process stage hardly any "results" are perceived, and in research, efficiency and tangible results have been given priority over the educational value of processes (p. 4).

The ReSEC project is an example of the first model (Bello, 2006; Grove & Fisher, 2006). It attempts to change the relationship between the SOE and the secondary school, and to respond to

the call by Cochran-Smith and Lytle (1993) for the inclusion of the voice of teachers in developing a knowledge base of teaching.

Method

The process of establishing the collaborative project began with the purposive selection of one SEMP school, based on ease of access to the teachers, the attendance of one of the teachers at the science symposium on February 10, 2005, and proximity of the school to the university campus. Negotiating entry was relatively easy because of a personal relationship between one member of the science unit and the Principal, who herself had participated in programmes at the SOE. She was contacted, and an initial meeting was arranged. Three members of the university team explained the project—its genesis and rationale—and obtained permission to proceed. A meeting was then held with three members of the teaching staff—two females and one male—of the science department. Two of them were at the time teaching Form 1 science and one had taught Form 1 science in the past. The project idea was presented and the two Form 1 teachers—one male and one female—agreed to participate.

The female teacher (identified in the report by the pseudonym DC) was assigned to the One Special class, referred to as 1S, comprising students who had scored between 0% and 30% on the Secondary Entrance Assessment (SEA). SEA is a national examination that is written by primary school students at 11+ and used to assign them to secondary schools. The male teacher (identified in the report by the pseudonym NB) taught the regular Form 1 class referred to as 1R, comprising students who had scored above 30% on the SEA examination.

The female teacher (DC) had 10 years teaching experience. Before assuming the position at the school at which the research was conducted, she had taught at two other schools. She had obtained a B.Sc. in Agricultural Science and was a trained teacher. DC had obtained the Agriculture Teachers' Education Centre (ATEC) diploma for teaching Agricultural Science and had recently been awarded a diploma in technology education. She was also the Head of the Department at the time of the research. The male teacher (NB) had been teaching for 3 years, was untrained, and had

obtained a degree in natural sciences with a major in chemistry. Before embarking on teaching as a career, NB had worked in a science laboratory in industry. Neither teacher had been exposed to the methodology of action research. Both are married and are parents.

Three members of the science unit of the SOE participated in the research. The most senior member of the team had been employed at UWI since 1983, and at the time was a Senior Research Fellow. Prior to employment at UWI, this participant had taught chemistry at the secondary level for 10 years. The other two participants joined the staff at UWI in 1996. One had 15 years of experience of teaching general science and chemistry at the secondary level. The other was a biology teacher with over 25 years experience at the secondary level. In addition, this participant had served in an administrative position at the secondary level.

The Research Procedure

The research group comprised three university participants and two classroom teachers. The first step for the university participants was becoming familiar with the school context. This involved observations of science lessons and engaging teachers in after-class conversations. At the beginning of the process, each teacher was observed by all of the participants from the university and after class-conversations were held. As the project evolved, each teacher participant worked with a member of the university team, who observed classes and engaged in the after-class conversations with the teacher. In addition, the university participant who worked consistently with the 1S teacher also taught the class on a few occasions. Materials were produced to support classroom teaching, either by the teacher, teacher in collaboration with laboratory technician, or teacher in collaboration with university participants. At intervals, the entire group met for purposes of reviewing, planning, and reflection. These meetings also served as opportunities for building interpersonal relationships. On one occasion, all participants met at the university for an informal get-together, which included lunch.

Data were therefore gathered from classroom observations, reflective conversations, and planning sessions. Classroom sessions and

meetings were audio-taped and transcribed. University participants also prepared field notes and were therefore the instruments for data collection. The data were analysed by university participants using a theoretical framework, for example, Clarken's (1999) elements of collaboration, and a grounded theory approach to determine other emerging issues

Emerging Issues

Two main issues were addressed as the collaborative process evolved. These were related to "perceptions of power differentials" and "clarification of the research process." Attention to these issues was required as we sought to "get it right."

Reducing the Perceptions of Power Differentials

A number of issues related to collaboration emerged. In the context in which we worked, we were aware that perceptions of power were inevitable. JG stated explicitly: "*I know I was aware of the power thing as perception.*" Perceptions of power differentials was an underlying concern because we were aware that attempts at collaboration within organizations and among stakeholders require the development of trusting relationships, which can facilitate freedom of expression. In a context in which we had entered uninvited, but in which we were nevertheless accommodated, and aware of the perceived differences in status of university lecturers and secondary school teachers, we took steps to smoothen the path to meaningful collaboration. The following illustrates our efforts at deliberately addressing perceptions of power differentials.

When we began the project during the first term of the 2005 academic year, most of the meetings were held on the school compound at the teachers' convenience. For example, we arranged meetings during their free periods or after school had been dismissed. We sought to have the process work in a way that would establish that we were partners in the process, as we attempted to build a trusting relationship.

Partners in the process. During the first meeting (20 September, 2005), we provided a background of the work leading to the conceptualization of the project and expressed our desire to collaborate with the teachers. The following illustrates:

JG: Before we could do anything we need to get you on board...We would work with you. We could plan together, share ideas, sit in on classes...really a collaborative effort over this 3 year period.

We tried to emphasize that we would be equal partners in the process.

SH: I just want to stress that we would be working together. We would really require a lot of your input.

At one point during the meeting a teacher asked: "*Exactly what are you all going to do?*" The following shows how one university participant communicated our orientation towards partnership with teachers:

JG: We don't know. When I say we don't know, it's the kind of project that evolves. I can tell you what our big goal is. Our big goal is to work with you.

At the beginning of the second term (January 2006), we invited the teachers to UWI for lunch, at a time that was mutually convenient for all parties. At this meeting, we engaged in a discussion that would allow us to establish a joint purpose for the project. After lunch, we reflected on the progress made on the project during the first term, and made plans for the second term. Based on the first term's experience, we thought that we could have suggested some project objectives to kick-start the discussion, for example, to gain insights into the challenges faced "on the ground" in the implementation of the national science curriculum:" "to work with teachers in dealing with these challenges;" and to work together to establish a joint purpose—one in which all parties had an input. At this stage, while we were focusing on the process of reform, the teachers were focused on a product such as a "new" curriculum, as the dialogue below illustrates:

JG: That's how we see it. We don't know if that's how it will play out. So those were our objectives." …Is there anything that you don't agree with? Anything that should be added? We are open. These things are not carved in stone. We can change as we see fit.

DC: What would be the outcome of this? Would it be a new curriculum?

As the meeting continued, one university staff member raised the issue of ways of addressing one another. She suggested a change in the level of formality that we had used at the start of the project:

JG: So maybe in the context of this then, you, Mrs. C and you Mr. B....And before I go to that, I'm wondering whether we should not shift to a first name basis...It's something for us to think about...So in the context of this, maybe D. and N. could give us some feedback on the Term 1 teaching experience and working with us.

We were always cognizant of the entry process—that we had proposed the idea of collaboration. Hence, when the project began, our focus in these early stages was to consistently communicate the message that the teachers would have direct control over the manner in which the project evolved. From the first session (September 2005), during which the project idea was introduced, and at follow-up meetings in October 2005, we as university researchers tried to facilitate the process of collaboration as much as possible with explicit signals for teachers' ideas and input:

JG: We thought that it was necessary to chat with you to see where you are coming from, what your goals and aspirations are for the class. And most importantly what contribution you think we can make … because that has to come from you.

During the meeting in January 2006, we as university participants again tried to facilitate the process of collaboration as much as possible by being flexible with the time for meetings and the venue selected:

JG: So work it out and let us know, but I would really welcome that- to be in the school and get more into it.

DC: Is Tuesday good for you?

NB: For me too.

JG: So let's work for Tuesday, yeah.

All: Yeah.

DC: Tuesday 31st January?

JR: And we're looking at what time to start? 2.00 p.m.?

The teachers' role in action research was also highlighted and shown to be an integral part of the process of collaboration:

SH: Actually we are working with you, but we are not the only ones researching.

NB: Yes, I understand. If I try an approach, I can think about how it was done. Can it be done better?

SH: A lot of reflection on your part.

Building trust. Honesty is an integral part of developing trust in a relationship. The SEMP science curriculum is designed to have students exposed to biology, chemistry, and physics as separate disciplines. It is common, however, that university graduates study for higher degrees in one or perhaps two of these sciences. It means that both teachers and teacher-educators could be challenged by some aspects of the syllabus. One university participant was forthright about these limitations:

JG: I know I was aware of the power thing as perception. One of the things I tried... was to tell the truth. I don't know the biology so in that sense he (NB) had it all, 'cause I'm not a biologist.... But I realized it's the system we live in, you know, especially when you preface the names by Dr. this and Dr. that. It sets up a kind of dynamic, which is really not what we want.

During the meeting JG also stated explicitly, "*We know we haven't got it right yet, but we would really like some very frank feedback.*" This statement provided the space for open, honest communication. Subsequently**,** one teacher (DC) felt safe enough to share information about feelings of tension she experienced when SH observed the classroom sessions. "*When I have someone in my classroom, it is obviously a tense moment, even though I did Dip.Ed. That's always a little struggle there.*"

Being open about the perceived power issue, honest about our deficiencies, and facilitating teachers' openness served to set us on the path to establishing a climate in which perceptions of power differences were diffused over time, though they were not entirely eliminated. Therefore, to deepen the levels of trust, we revisited our communication strategies, especially those that would facilitate our movement from university participant as expert to university participant as learner and collaborator in this particular context.

We had entered the context with the intention to be equal partners in the collaborative process, and thus to learn from and with the teachers as a strategy for reforming science education. The manner in which we attempted to build trust and create opportunities for learning to occur and for shared decision making about science curriculum was determined by the specific interactions in which we were engaged. For example, SH, who was working with a trained and experienced teacher, adopted strategies that respected the teacher's practical and professional knowledge base. Examples of how this was done are presented below.

During the after-class discussion of the science lesson held on 25 September, 2005, SH suggested that worksheets/activity sheets could be developed for use in the class. The following excerpt illustrates her use of questioning as a means of suggesting new ways of operating in the classroom. Significantly, the excerpt also reveals that the idea of collaboration was cemented. The teacher used the pronoun "we" in the sentence "We could try that."

SH: But do you think that they would be able to work with each other in groups... if they were given some information? Information related to the factors or the conditions required for photosynthesis? If they were given a little worksheet or activity sheet with some pictures? Do you think that they would be able to work in groups to come up with what is required for photosynthesis? And what is photosynthesis?

DC: They would be able to work in groups.... Yes, they could but that would have to be over a series of classes. I don't think that they could come up with a conclusion in one class...We could try that. Do up a worksheet.

Towards the end of the conversation, SH also sought clarification on how they should proceed in developing the worksheet and offered assistance in the production of the worksheet:

SH: So is there anything...Do you think that you would make the worksheet? I don't know if you would want any input. I mean, if you would want any input from me or from us...Or do you think that you would have to conceptualize what you're doing?

DC: Initially before you suggested it I had planned to do a little experiment...to make sure they understand.

SH: ...What I'm saying is if you produced the worksheet and you wanted to have it copied, we would try to help with the resources...

DC: The school has money. No. We have lots of paper.

Power Differentials Surface

Yet, despite attempts to reduce the impact of perceptions of power differences, we were not always successful. For example, there were occasions when we felt that we were intruding. During the conversation of 25 September, 2005, Mrs. C mentioned that she had changed her plans to accommodate SH's scheduled visit. She did not consider cancellation as an option, giving the impression that she did not consider herself as an equal partner. The following illustrates:

SH: So when did they get the results of the test?

DC: They still have to.... I don't know...I didn't have time to do that yet (sighs). It's just dragging on. I couldn't give them today because that would have been a whole lesson. I don't want to waste your time. So I put it off. We'll see what happens.

Feelings of intrusion also surfaced when we met with teacher participants for the after-class conversations. In the absence of an official meeting/conference room at the school, we met in the library on most occasions. However, with the required rearrangement of furniture or student dislocation to facilitate such meetings, we sensed some unease on the part of the librarian. Although

permission was always given, it appeared that we were really inconveniencing the library staff.

Incidents such as these led to reflections on the process of establishing collaborative relationships within a school setting. For example, we pondered upon questions such as: Who should be involved in the process of establishing a collaborative project in a school? Did the approach adopted inadvertently reinforce perceptions of power? Furthermore, when we noted that we were the ones initiating contact, we recognized that the one-sided communication was an indication that the issue of power differentials had not been resolved.

One-sided communication. One of the main factors impacting upon any collaborative project is communication (When do we meet? How often? Where do we meet? How do we maintain contact? What do we discuss?). Our different locations within the education system and the competing pressures of workplace responsibilities were challenges that emerged. DC said: "*It will have to take a high priority because there are lots of other things going.*" During the early stages of the project (October 2005), SH and DC had planned to work together to produce a worksheet. SH suggested to DC that that they should communicate via the telephone. DC suggested communication via e-mail.

However, the priorities of workplace responsibilities, such as accommodating changing school schedules, reduced the time available for preparation and feedback, and DC did not initiate contact either by telephone or by e-mail as she had suggested. Consequently, the worksheet referred to above was prepared without the collaboration intended. During the second term, SH became involved in teaching one class. Accordingly, two-way communication was even more crucial to ensure that her plans were congruent with the teacher's plans, and that the students had the necessary prior knowledge or skills required for the lesson. The following reflective entry, written in February 2006, also illustrates the pattern of the one-sided nature of the communication process that was a recurring theme:

> I called DC on Friday morning to express my concern that the students would not be ready for a lesson on chromatography as we had planned. After reflecting some

more I felt that it would be more logical to do a session on evaporation as I had initially planned after the lesson on crystallization on Thursday. She said that there was no science class on Thursday and mentioned her disappointment that again when she is responsible for an aspect of the plan that that is no follow-up. (Last week Thursday, D was supposed to introduce the students to the use of the spatula in preparation for my class on 14/2/06 and this was not done). I therefore expressed my desire to do the session on evaporation on 21/2/06 instead and that I would go ahead and prepare the worksheet with this in mind.

We interpreted the lack of initiative in making contact as evidence of teacher participants' continuing discomfort with the process of collaboration or as a means of redistributing power. It was only by the beginning of the first term of the second year of the project that one of the teachers began to initiate contact. JR reports on such contact in September 2006 via e-mail to one of the university participants:

> I heard from N yesterday. He has been assigned two Form 1 classes, and has requested (as part of the collaborative process) that I meet with him to engage in planning for these classes. He is free for one period tomorrow morning, so I promised to meet with him at 9.40 a.m. I know that you operate on a tight schedule now, but I was hoping that you could join us and share your ideas.

The above illustrates some of the challenges that were associated with perceptions of power. But two other issues emerged during the early phase of the project. One was "impatience with the collaborative process;" the other was "clarification of the research process." A discussion of these two issues follows.

Impatience With the Process of Collaboration

During the second month of the project, we, the university participants, began to construct a deeper understanding of the collaborative process. The

attempt to collaborate led to personal insights about human frailties impacting on researcher as instrument. For example, the following comment, during the early phase of the project (October 2005) when DC indicated that she would prepare a worksheet, illustrates that SH was willing to circumvent the processes involved in developing a collaborative relationships, in order to expedite results.

SH: But if it's [help is] not required. Well, great. It means that we won't have to make an arrangement about when we would meet to drop off the worksheet and so on.

The teacher's independent actions removed the obstacles associated with (a) arranging convenient times for face-to-face meetings, or (b) using technology for communication. While this results-oriented approach may have served to move things along, independent action reduced the level of collaboration.

The project therefore served as a medium for university participants' learning at many levels. As teacher educators, we had not hitherto collaborated with other stakeholders in the manner dictated by the project. As such, we had to learn how to surrender control and to develop trust in the process. Further, the teacher participants had not been engaged in research in this way before, so we also needed to "clarify the research process" at intervals, as we collaborated on the project.

Clarifying the Research Process

During the preliminary phase of the project, it was necessary to discuss the research process on numerous occasions. This was particularly important because we did not plan separate sessions that dealt exclusively with research. During the first meeting (20 September, 2005), the action research process was described as follows:

JG: The kind of research we're really talking about is called action research where you research as you work and you analyse your research data as you work and you use the results of your analysis to put back in your planning and you work it during the cycle.

However, there was evidence that teacher participants did not fully understand the research

dimension of the project. During the meeting of 4 October, 2005, one of the teachers sought further clarification on the research focus.

NB: The action research, what would it entail? Like what is involved in the research? ...Is it looking at the classes, looking at inputs? Is it that you get information and experimentation ... is it like that? I'm trying to picture what it is like. I can't really...

JG: I think I need to start from the beginning again. Because it is not like you described.... Maybe what we should do next time is to bring a little bit of literature on action research so you can read about it.... If it were the other kind of research we would tell you these are our objectives and stuff like that.

We did follow-up with the literature and, in addition, we presented a framework to assist teacher participants as they reflected on lessons taught. The forms were intended to induct teachers into the data collection process. By reflecting and writing about specific teaching issues, the teacher participants would have data to share with us and together we could work towards addressing the issues of concern. But up to the point of preparing this report, the time available and the school context did not allow us to help them to understand fully their roles in the data collection and analysis procedures.

Even though there were challenges associated with establishing and engaging in the process of collaborative research, there were benefits derived from the said process. Some of the benefits are discussed below.

Benefits

From our perspective, there were benefits accruing to the teacher participants and to us—the university participants. The teachers had the opportunity and support to reflect on their practice and we—the university participants—learnt valuable lessons that would enhance our future interactions with teachers in their own school environment and in the university classroom. Each benefit is discussed in turn.

Teachers reflect on their practice. After-class conversations provided opportunities for teachers

to reflect on their practice, and, hence, to identify issues for concern, propose solutions, act on them, and reflect on their actions. From our perspective, teachers' involvement in reflection on their teaching was a benefit, and the following illustrates how teachers' reflections led to modification of the science curriculum.

After seven months of collaboration, a discussion between teacher participants and university participants in May 2006 revealed that both teachers had modified their practice to facilitate student learning. The 1S teacher reflected on her actions in the classroom, and her comments show that she had refocused her science teaching by placing more emphasis on students' development of science concepts and less emphasis on developing basic literacy skills, such as writing and spelling:

DC: In delivery, using a new approach I am using more worksheets to provide more structure. This gives more time for teaching and student activity. The downside is that students may lose the worksheets, but I try to ensure that they place the worksheets in their books for review. … May compromise on literacy skills (since students have less opportunity to write out everything), but there is more time for science. Literacy can be left for the remedial group. The focus is on having students enjoy and understand the science.

The 1R teacher had expressed interest in using students' prior knowledge as the vehicle to increase the level of student-centredness in the classroom. In other words, he intuitively felt the need to put constructivist theory into practice:

NB: Trying to use students' prior knowledge. This is a new area for me. I used to tell them everything. With the clarification on the use of notes as a teaching strategy, I bring on more activity. [I try to] develop notes with the students. Moving from too much explanation to using more visuals...not too T-centered, using the visuals to help students make sense...I am still challenged about what might be the ideal activity, and making links is the hardest challenge for me. I am trying to formulate ideas, but am still not sure. I like the idea of moving from concrete to abstract.

University participants learn from experiences. For example, DC's modifications of the curriculum were based on (a) her desire to meet the perceived needs of the students by providing concrete concepts, (b) her recognition of the importance of having students establish links (relationships) among concepts, and (c) her intention to have students discern the relevance of the material studied to their everyday life experiences. Her concerns about the abstract nature of the concepts to be introduced were expressed in the after-class conversation in October 2005, as follows:

DC: Well I decided to continue with plants and look at more concrete things. All right. So I say I branched off from the cells. I basically finished with that because I'm not going into too much detail...We looked at the organism as it pertained to well man...so I thought I'd try to connect the two looking at a living thing and then move on into parts of plants that they could see and touch—concrete.... I wanted them to know that not only animals and man but [also that] plants are made up of organs... make sure that they make the connection.

However, the influence of the written curriculum document surfaced as the conversation progressed. She expressed the view that she should introduce ideas that would have prepared students for what was to come. The following dialogue illustrates:

DC: I want to touch everything before the end of the year.

SH: When you say everything…?

DC: The major topics. They have to do matter and energy... microorganisms. I don't know if I really want to go into that.

SH: But why do you want to touch everything?

DC: Well so at least they'll be a little more prepared when they get into Form 1. You know?

Based on the interactions with the teacher participants, we began to understand the nature of the tension that emerged when the teachers attempted to be faithful to the curriculum document [fidelity approach to curriculum implementation] and, at the same time, attempted to modify the curriculum in response to students' needs. For example, even though DC taught a 1S

group with special needs, for which there was no written curriculum, she felt that she should introduce all the topics that were intended for the regular Form 1 classes. In addition, teacher participants did not feel empowered to make changes to the national curriculum. For example, DC needed clarification on whether the outcome of the collaborative process would be a new curriculum, given that teacher participants worked in a context in which the Ministry of Education usually sanctions changes to curricula. We therefore learnt the following:

- The stronghold (even stranglehold) of the national curriculum and officialdom

- The difficulties teachers face in adopting new roles—even an experienced teacher like DC

- The hidden (or not so hidden) agenda that all students must cover the same material (as exemplified by DC in particular)

- Power of contextual variables

The above shows that the issue of modifying a national curriculum to meet diverse student needs is not as straightforward as it might seem. This knowledge is very important, as there are implications for teacher development programmes.

Discussion

The findings from this study bear some similarities to, and show some differences from, those reported in the literature. Some of the similarities are related to the patterns of participation that emerged. For example, in spite of our attempts to reduce perceptions of power differentials, such as time for socialization, we (the university participants) perceived that initially the power dimension between the teachers and the university participants was one of power-over (control) (Park, 2001). Similar views have been reported by Fetters and Vellom (2001). They stated that teachers "were leery of working with the university. They did not want university personnel to come in and take over" (p. 74). In addition, our attempts to establish mutuality and trust are similar to the retreats mentioned by Grove and Fisher (2006). Other significant similarities were those related to the constraints of time available for collaboration within the current structures of

the public school system and the university, and the uncertainties associated with the initial phase of the collaboration process. Bello (2006) describes the initial phase of establishing collaboration as "messy." It can be posited that this messiness is the period required to resolve and to reconstruct perceptions about others before true collaboration can begin.

Most of our interactions (social and/or professional) are predated by historical antecedents. These in turn give rise to perceptions about the interacting parties and shape the manner in which the interactions occur. In the particular interactions reported on in this study, which aimed at collaboration, the antecedents include the history of development of the school and the university as institutions within the Trinidad and Tobago context. Since none of the participants entered the collaborative relationship in a vacuum, it is natural that the perceptions of the participants involved would have mediated the interactions and contributed to some of the messiness that occurred.

As we strove to adopt the principles of collaboration (Clarken, 1999), it was evident that we proceeded differently from some researchers in the international setting. For example, Grove and Fisher (2006) reported an approach that seemed to retain a top-down dimension. They stated that "goals for participants were further developed at a weekend retreat" (p. 57). In this study, we attempted to establish egalitarianism by facilitating "a joint purpose." As was reported earlier, we were "aware of the power thing as perception," and this perception provided the conceptual framework that guided many of the processes and procedures that were enacted. Another difference that must be taken into account is the context in which this study was conducted. As is commonly reported in the literature, (see for example, Bello, 2006; Grove & Fisher 2006), participants involved in similar action research projects had prior relationships with the researchers or had been exposed to action research programmes, which might have facilitated the process.

Alongside the challenges involved in establishing a true collaborative relationship, some benefits were evident. With respect to the development of the reflective habit, the literature suggests that teacher reflection can contribute

significantly to transforming practice. The process of reflecting provides teachers with knowledge that informs future actions and improves the quality of science teaching (Carr & Kemmis, 1986; Elliot, 1991; Lincoln, 2001). As teacher educators, we perceived that some transformations had occurred based on teacher participants' explicit comments and observed actions.

Further, the experiences gained from teacher participants' attempts to transform the science curriculum, along with the ensuing tensions/conflicts, provided some insights for our own practice. In-service teachers with whom we interact often comment that the curriculum as written does not meet the needs of many of their students. We have often recommended that they adapt the curriculum, but we did not have first-hand experience of the issues involved with following such prescriptions. The results of this study show that curriculum modifications are not as straightforward as they may appear. With the insights gained, we are now better placed to develop strategies to help teachers in our professional development programmes to deal with the philosophical, technical, and context-specific dimensions involved.

Participation in the project also led to a new level of collaboration among stakeholders, and also saw an increase in the membership of the community of practice. For example, the laboratory technician moved from the position of an outsider, to a peripheral member, to an active member of the group (see Wegner et. al., 2002). This is an example of the dynamic nature of the community that emerged and the level of comfort that had eventually developed among the members of the group. The level of interaction among university participants themselves was a reflection of a changing culture—from one of cooperation in which an individual accepts and works along with another's ideas to a sense of community and shared mission in which there is input from all parties to set the agenda for action (see Bruce & Easley, 2000).

In conclusion, our interpretations of our interactions with teacher participants were influenced by our perceptions, experiences, and so forth. At the beginning of the process, our interpretation of teacher participants' perceptions of power was the concept of power as control, that is, by technical means that derive from representational knowledge. However, as we interacted with teacher participants and as the project evolved we began to develop a different understanding of the conception of power—one that did not involve control only. This new understanding incorporated a more liberating concept of power, which embraces solidarity and self-confidence as well as control, as advocated by Park (2001). By engaging in this process, we were able to reconstruct our understanding of the collaborative process and become more conscious of cultivating reflective knowledge as we work towards co-constructing the concept of power as confidence (power-from-within) (Park, 2001).

The learnings from this research project are instructive for the future of university/school collaborations in the area of curriculum reform within the Trinidad and Tobago context. Power differentials, along with associated issues of trust-building and communication modes, are inevitable when there is the perception that the knowledge brought by any one party has greater value or currency. The process of developing meaningful collaborative relationships in such groups therefore requires time and the requisite dispositions of openness, honesty, and commitment from all concerned, since there is no easy solution to attaining optimum collaboration. We recommend that further action research projects of this nature be conducted if we are to increase our knowledge and understanding about reforming science curricula within the Trinidad and Tobago context.

References

Beck, C., & Kosnik, C. (2006). *Innovations in teacher education: A social constructivist approach*. Albany, NY: State University of New York Press.

Bello, E. E. (2006). Initiating a collaborative action research project: From choosing a school to planning the work on an issue. *Educational Action Research, 14*(1), 3–21.

Bruce, B. C., & Easley, J. A. (2000). Emerging communities of practice: Collaboration and communication in action research. *Educational Action Research 8*(2), 243–259. Available at http://www.mste.uiuc.edu/dime/collab_com.html

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*. London: Falmer Press.

Clarken, R. H. (1999). *University/school collaboration guide and checklist*. Retrieved November 6, 2006, from http://www-instruct.nmu.edu/education/rclarken/education/univ-schl-collaboration.htm

Cochran-Smith, M., & Lytle, S. L. (1993). *Inside/outside: Teacher research and knowledge*. New York: Teachers College Press.

Cooper, K., & White, R. E. (2006). Action research in practice; Critical literacy in an urban grade 3 classroom. *Educational Action Research, 14*(1), 83–89.

Elliot, J. (1991). *Action research for educational change*. Philadelphia, PA: Open University Press.

Fetters, M. K., & Vellom, P. (2001). Linking schools and universities in partnership for science teacher preparation. In D. R. Lavoie & W-M. Roth (Eds.), *Models of science teacher preparation: Theory into practice* (pp 67–88). Dordrecht, The Netherlands: Kluwer.

George, J. (2003). *Lower secondary science teaching and learning: Teachers' characteristics and perspectives* (Monograph Series; No. 7). St. Augustine, Trinidad: School of Education, UWI.

Greenwood, D., & Levin, M. (2000). Reconstructing the relationships between universities and society through action research (pp. 85–106). In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.

Grove, K., & Fisher, D. (2006). "Doing collaboration": The process of constructing an educational community in an urban elementary school. *Ethnography and Education, 1*(1), 53–66.

Herbert, S., Rampersad, J., & Akinmade, C. (2003). *Lower secondary science teaching and learning: A glimpse into the science classroom* (Monograph Series; No 8). St. Augustine, Trinidad: School of Education, UWI.

Lincoln, Y. S. (2001). Engaging sympathies: Relationships between action research and social constructivism. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 124–132). Thousand Oaks, CA: Sage.

Park, P. (2001). Knowledge and participatory research. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 81–90). Thousand Oaks, CA: Sage.

Piliouras, P., Kokkotas, P., Malamitsa, K., Plakitsi, K., & Vlaxos, I. (2003). *Collaborative inquiry in science education in Greek elementary classroom: An action research program*. ESERA: Research and the Quality in Science Education, The Netherlands, Apr 19-23. Available at http://www1.phys.uu.nl/esera2003/programme/pdf%5C1235.pdf

Rampersad, J., & Herbert, S. (2003). *Lower secondary science teaching and learning: An inventory of science apparatus and materials* (Monograph Series; No. 9). St. Augustine, Trinidad: School of Education, UWI.

Shotter, J. (1993). *Conversational realities: Constructing life through language*. Thousand Oaks, CA: Sage.

Souza, T. J. (n.d.). *Collaboration in and of research in teaching*. Retrieved March 9, 2007, from http://www.roguecom.com/roguescholar/collaboration.html

Trinidad and Tobago. Ministry of Education. (2002). *Secondary Education Modernization Programme: Secondary school curriculum: Form Three: Science*. Port of Spain, Trinidad: Author.

Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice*. Boston, MA: Harvard Business School Press.

Creating a Constructivist Learning Environment: The Challenge of Jamaica's Revised Primary Curriculum

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Abstract. For two decades, Jamaican primary school children were exposed to a curriculum which, though conceived as integrated in its approach to teaching, in actuality was more discipline-based, accentuated by the use of didactic pedagogical strategies in its delivery. In re-engineering this curriculum, a child-centred, integrated holistic curriculum was adopted at the lower primary level, with a more subject-based approach at the upper levels. A constructivist pedagogical approach was adopted. The changes expected in the learning environment included a change in the role of the teacher, the use of questioning techniques that stimulated higher-order thinking in the children, a more activity-oriented environment in which children were frequently engaged in collaborative learning, and changes in the mode of assessment. The revised curriculum was implemented in schools in 2001. This paper explores the extent to which such changes are evident in the classrooms of Grades 1–3 in selected primary schools. It pinpoints challenges such as resources, contextual factors, and examinations, which some teachers can overcome to ignite a passion for learning in their pupils.

Purpose of the Study

This study reports on an aspect of a larger study in progress. The basic question it seeks to answer is whether there is evidence of the teachers moving away from "chalk and talk" to becoming facilitators of learning who are more child-centred in their approach to teaching. More specifically, it seeks to find out the extent to which teachers of Grades 1–3 in Jamaican primary schools are using the constructivist approach to learning in their classrooms.

Background

The Foundations of Self Reliance/Self Development (FSR/D) is the series of guides set out by grade level and implemented in the Jamaican primary education system in 1980. Developed by the Core Curriculum Unit (CCU) of the Ministry of Education, it focused on four core areas—language arts, mathematics, social studies, and science. Secondary to these are areas for skill development, aesthetic awareness, and the development of positive attitudes and values—music, physical education, art and craft, and religious education. This curriculum sought to move away from a subject-centred approach to

curriculum organization. Themes drawn mainly from social studies were used to correlate/integrate the areas of the curriculum. Jamaican teachers were advised to use a variety of approaches to integration in order to "encourage the child to explore and expand his own life experiences and …. in the spirit of enquiry and problem solving, utilise to the fullest extent groups resources and potentials in the immediate environment" (Jamaica. Ministry of Education, 1980, p. ii). Additionally, there was a thrust towards encouraging teachers and pupils "to explore a wide range of methods and techniques rather than to focus on 'chalk and talk' and rote learning methods" (p. ii).

After some two decades of use, the content of the FSR/D was still considered "relevant and suitable for the target audience, although some concern was raised with respect to areas such as music and religious education" (Bailey & Brown 1997, p. 148). However, there was general dissatisfaction with the product of the curriculum as evidenced by the fact that some 70% of the pupils leaving the primary school were reading at the Grade 4 level (Myers, 1989). A number of factors contributed to this, some of which were external to the school (e.g., socio-economic factors that impact on school attendance) and

others internal to the school (e.g., teacher competence and the extent to which they served as good models of the target language—Standard Jamaican English (SJE)). The fact that primary school teachers have to teach SJE to children whose vernacular is Jamaican Creole poses additional difficulties. As Craig (2006) maintains, "What the teacher needs to be clear about therefore, bearing in mind the necessity for teaching English, are those invariant characteristics of English structure which the learner must be assisted to acquire" (p. 5). Many teachers fall short in this regard. But there was also concern about the volume of subject matter in the primary curriculum, which had come under the influence of various pressure groups who wanted the curriculum to include subject matter that ranged from tourism, HIV/AIDS, substance abuse, and other health issues, to environmental issues and technology. The curriculum was bursting at the seams in disarray.

In 1993, the Government of Jamaica commenced a number of initiatives designed to address the inadequacies of primary education, including consultation with stakeholders. There was a call for a new approach to curriculum organization at the primary level. Consistent with international trends, there was general consensus on a move away from the compartmentalized, subject-based curriculum to a more integrated approach based on themes that would allow for the inclusion of the social issues and other concerns of the pressure groups. Such a shift in the organization of curriculum content would also require a shift in the methodology of teaching. Again, consistent with international trends, a constructivist pedagogical framework was endorsed for the primary curriculum.

Theoretical Perspectives

Constructivism

One of the key ideas associated with constructivist theory is that learning should be meaningful and related to real-life situations. Education based on the life experiences of the individual is also a central feature of John Dewey's philosophy of education. The latter he also associates with democratic principles relating to a regard for

individual freedom and a "kindliness of human relations," which, he argues, leads to "a higher quality of experience on the part of a greater number than … methods of repression and coercion or force" (Dewey 1938, p. 34). Teachers following a constructivist perspective base their instruction on what the students already know as a foundation (Duhaney & Duhaney, 2000). Usually, this involves the teacher first discussing some related ideas that are already familiar to the students before moving on to introduce a new concept.

Another principle underlying the constructivist approach is a focus on key ideas and the relationships of these ideas within the subject areas and across subject areas. Brooks and Brooks (1993) emphasize that information presented to learners needs to be organized around conceptual clusters of problems and questions, as students are most engaged when problems and ideas are presented holistically rather than in disconnected parts. Support for this comes from brain research, which reports that the brain processes information through patterns and connections, with an emphasis on coherence rather than fragmentation (Caine & Caine, 1991). Thus, it is argued that the more knowledge is unified the more "brain compatible" it is and the more accessible for learning.

Active learning is an important facet of a constructivist approach to instruction, because when students are actively involved in the lesson they learn and retain the information (Duhaney & Duhaney, 2000). In the language arts areas, the use of literature related to themes being studied keeps students focused on topics of interest. Teaching students to summarize, paraphrase, predict, and use visual images, which all involve active learning, helps them to understand and remember. Role play, art, and group projects are also useful for clarifying and reinforcing instruction (Ellis, 1997). Higher-order thinking skills, such as problem solving and analysis, are an important part of a constructivist curriculum. Teachers would therefore need not only to pose questions that foster the development of higher-order thinking such as application, analysis, synthesis, and evaluation, but they also need to provide opportunities for the children themselves to pose questions. The type of questions posed by

teachers gains added significance in the constructivist curriculum. The ideal is open-ended questions that encourage higher-order thinking skills and multiple perspectives rather than the closed questions that seek just one right answer, thereby stifling students' creative thinking. The use of more varied forms of student assessment is also associated with the constructivist curriculum. The one-shot examination is no longer the dominant mode of assessment. It has been replaced by continuous assessment through ongoing use of journals, portfolios, short quizzes, and group tasks, as well as paper and pencil tests.

Behaviourism

The application of behaviourism to classroom instruction has been seen as a more structured approach to teaching, referred to as direct or didactic instruction, or simply chalk and talk. As noted earlier, in Jamaica, the Ministry of Education has been trying to get teachers to abandon this approach for a less structured approach to teaching. But research has shown that this approach incorporates strategies that lead to positive benefits, particularly for children with learning disabilities. Examples of such strategies include breaking down a task into smaller segments for teaching, modelling, and demonstrating (e.g., the writing process); providing extensive drill and practice as this aids memory; monitoring and providing feedback to the pupils during the course of the lesson (Steele, 2005). Locally, it is estimated that the special needs population in Jamaican schools is between 12% to 24%. These children are at risk and in need of special intervention, and yet less than 1% of these are being given attention in special education programmes (Jamaica. Task Force on Educational Reform, 2004). Bearing this in mind, the question arises whether we should not be harnessing the more positive aspects of direct instruction, and perhaps combining these with such aspects of the constructivist approach to learning that teachers find more manageable in their classrooms.

The Revised Primary Curriculum (RPC)

The RPC was developed based on a vision of developing in the primary child a positive self-concept; basic competence in the skills needed for literacy, numeracy, creative expression, independent learning, and problem solving; basic understanding of their physical, social, cultural, spiritual, and aesthetic environments; empathy for the feelings and viewpoints of others and a willingness to work with others to achieve common goals; care for their personal environment; and a positive attitude towards work (Bailey & Brown, 1997). To realize this vision, the team that developed the RPC deemed that a "paradigm shift" was needed "from a compartmentalised, subject-based curriculum…to the thematic approach which allows for horizontal organisation of the subject matter and establishing relationships across subject boundaries" (Bailey & Brown, p. 148). A holistic approach to integration was adopted at the lower primary level (Grades 1–3), but with the provision for "opening windows" that allowed for the discrete treatment of mathematics and language arts, given the critical importance attached to literacy and numeracy at the primary level. To gradually allow for the smooth transition to the secondary level where the subject-based curriculum is used, a subject-based organization was retained at the upper primary level (Grades 4–6), with provision for the correlation of related concepts and the achievement of higher levels of integration through organizing projects around issues. This shift in curriculum organization also required a shift in the methodologies employed for teaching. A constructivist approach to teaching was endorsed for the reasons outlined above and in order to create more humanistic, student-centred classroom environments in which the interests, needs, feelings, and opinions of students are valued by teachers. Improvement in children's behaviour has also been associated with the use of the integrated approach (Beane, 1997).

The Task Force on Educational Reform (2004) drew attention to the fact that "provision was made in the revised curriculum for windows for literacy and numeracy. However, no programme or materials were developed since the inception of the curriculum" (p. 48).

Literacy 1-2-3

In 2006, the Ministry of Education commenced the piloting of Literacy 1-2-3. These are materials designed to support the Language Arts Window (LAW), which concentrates on teaching language and literacy. This is a period of 60 minutes in the integrated curriculum. The materials—Big and Little Books, Pupils' Activity Books, and Anthologies—used in LAW are designed to match the themes in Grades 1–3 in the RPC. Literacy 1-2-3 is built on the same pedagogical principles that underpin the RPC. For example, the RPC emphasizes that children should engage in strategies such as cooperative learning and group and project work, which encourage pupils to explore and share ideas as they identify and solve problems.

Literacy 1-2-3 uses a strategy whereby when teachers open the LAW they begin the lesson with a whole-group session (approximately 15 min), which could take the form of a discussion, phonics instruction, or some word study activity. At the end of this introductory session, the teacher provides directions for the next segment of LAW. Most of the class is taken up with group work, which allows the pupils to take a more active role in their own learning and provides them with more opportunity to interact with each other and the teacher. It is recommended that teachers establish four groups and work with two of these groups during class time for about 15 to 20 minutes each. When not working with the teacher, each group should be involved in independent, paired, or group activities. The class should end with a brief (approximately 10 min) whole-class discussion and evaluation, during which the children discuss what they have learned and share their work. The focus is on discussion and presentation by the pupils. This represents a clear movement away from the traditional chalk and talk.

Research Questions

To find out the extent to which teachers of Grades 1–3 in Jamaican primary schools are using the constructivist approach to learning in their classrooms, the following questions were asked:

To what extent do teachers:

1. relate what they teach to the real-life experiences of the children?

2. base their instruction on children's previous knowledge?

3. foster active and collaborative learning through use of grouping strategies?

4. use a questioning technique that fosters the development of higher-order thinking skills?

5. use varied forms of assessment?

Methodology

The larger study uses a mixed method design, combining qualitative and quantitative techniques. Questionnaires were developed by the writer for teachers to evaluate the content and activities for the Big and Little Books, phonics charts, and audios used in the Literacy 1-2-3. A questionnaire was also developed for the children to assess the materials and activities. This instrument was administered by liaison officers who served as mentors for the teachers in the pilot schools. Forty eight teachers from both Grades 1 and 2 and 45 Grade 3 teachers in 30 pilot schools spread across the six regions in Jamaica received training in the use of the strategies for Literacy 1-2-3 over a two-day period. An observation schedule was developed by the writer to ascertain how the teachers were using the strategy in the teaching of literacy, with particular reference to how they organized the children for learning and how, in their instruction, they used the key principles that underpin constructivism as outlined under the purpose of the study. The observations of the teachers are being done by 17 liaison officers in the six regions. As the Curriculum Specialist in the pilot project, the writer also observes the teachers. Only the writer's observations of the lessons of 14 teachers over a 10-week period are reported here, along with feedback from the liaison officers on their own observations in the 30 pilot schools, which was provided at 3 one-day meetings, and from a workshop held with the teachers in the pilot schools in April 2007. Ninety teachers attended this workshop.

Each lesson observed by the writer lasted for one hour and this was followed up by an interview with the teacher. Additionally, the writer asked 14 trained primary school teachers to write about their attempts to use the constructivist approach to learning in their classrooms. These teachers were reading for a Bachelor in Education degree at the The University of the West Indies (UWI), and were doing her course as part of that degree. The course was ED30M — Integrating the Primary Curriculum.

Findings

At this stage, the findings can only be viewed as tentative and indicative of trends. Two meetings held so far with the liaison officers indicate that the findings are corroborated by their own observations in the field.

Relating to the Children's Experiences and Previous Knowledge

In the training workshop, the teachers were encouraged to start their lessons with a whole-class arrangement and allow the children to talk about their experiences. Skilfully, they could lead from even one of these experiences to the topic for the lesson. Of the 14 lessons observed, only one came close to this. This was a lesson taught by Ms. Kelly, a Grade 2 teacher. She selected a few children and asked each to come to the front of the class with something they had and tell the class what they had in their hands. Sharon came to the front of the class and said "I have J$20.00." The teacher wrote on the chalkboard, "Sharon has J$20.00." Kareem said "I have a rag" and the teacher wrote on the chalkboard "Kareem has a rag." The teacher led to the topic of the lesson in this way:

Ms. Kelly: Read the sentences on the board.

Children (in chorus)*: Sharon has J$20.00. Kareem has a rag.*

Ms. Kelly: Is there another way we can say that?

Child: This is Sharon's J$20.00.

Ms. Kelly: What do you notice about the sentences?

Child: They have apostrophe 's.'

Ms. Kelly: They show ownership. What does Kareem have?

Children (in chorus)*: Kareem has a rag.*

Ms. Kelly: How can we say that another way?

Child: It is Kareem's rag.

The teacher then used the story in the Big Book to reinforce the children's understanding of how to show possession.

But Ms. Kelly was not a typical teacher. Most teachers dived straight into the topic of the lesson with no introduction. Two typical examples are:

Ms. Meg: What else do we call 'action words'?

Child A: Rhyming.

Child B: Doing words.

Child C: Verbs.

Ms. Meg: Yes, verbs.

Ms. Meg: What is a telling sentence?

Child A: It tells about something or someone.

Ms. Meg: What is special about telling sentences?

Child B: It begins with a capital letter and ends with a dot.

As if trying to persuade the children (and perhaps the observers) that she was building on their previous knowledge, Ms. Simms, instead of allowing the children to reveal what they already knew, simply reminded them that "We did a lesson in Integrated Studies on the body and we learnt how we would grow if we didn't eat our food." In three of the classes observed, the teacher began the lesson with a song. In some cases the choral singing served to settle the children after break and encouraged attentiveness, as in the case of the lesson that began with a song about a rabbit, which had nothing to do with the topic of the lesson. Another class began with a "Story time song," which introduced a story that the class proceeded to read. From the way in which the children sang zestfully in all cases, it was clear that the teachers were capitalizing on something that they knew the children loved to do.

Grouping Strategies to Foster Collaborative Learning

Several grouping strategies were observed. Some teachers interpreted group work to mean dividing the class into smaller groups (e.g., three), then lecturing to one group while the others, though sitting together, worked individually. When put to work in pairs, children devised their own coping strategies. While some pairs could be observed discussing the task, in other pairs, one child would assume responsibility for writing one sentence, while the other took the opportunity to wander around the classroom looking at the charts or mobiles or taking a peek into a book, but would return when called by the partner to come and take his turn.

Limited classroom space posed a difficulty for the use of group work by some teachers, and some schools posed additional constraints by instituting a policy that children in classes should be grouped in Houses. In one school, the Houses were named after the National Heroes of Jamaica, so when the teacher asked Bogle House to read, all the children in that House stood up and did choral reading. The teacher said that that was the best that she could do as group work. On the day of observation, there were 38 children in class.

In classrooms with more space, the two-seater wooden benches were moved to a group formation. In some instances, although placed in groups, the children worked individually. In others, the groups appeared tightly knit, and especially when the group task was competitive, group members could be seen with their arms around each other's shoulders (schools challenge quiz style), keenly trying to solve a problem and making sure that their deliberations were not heard by their competitors. In one class, a little boy expressed annoyance with a girl from another group who had borrowed a pencil from a boy in his group who now had nothing to write with. He reminded her, "Don't you hear Miss say that you must only borrow from people in your own group?"

Teaching Strategies: Questioning

The type of questions that teachers ask can either block or offer children the opportunity to learn through talking, so that their language increasingly becomes expressive of the new mental powers they have acquired. Jennings-Wray (1984), in her observation of teachers using an integrated curriculum, noted that there were few examples of teachers using "open questions" (i.e., the type where a number of different answers would be acceptable) and many instances where teachers either used pseudo questions (i.e., those that appeared to offer an opportunity for multiple possible answers but, in fact, the teacher wants the one she has in her mind) or they questioned in such a way as to elicit only one right answer. Over two decades later, the situation has hardly changed. Sometimes the recall questions were so simple that the children could answer in unison and give the correct answer. For example:

Teacher: Who came to visit?

Children (in chorus)*: Grandma.*

Teacher: What did she notice at breakfast?

Children (in chorus)*: Peter wouldn't eat his porridge.*

There were innumerable instances of the "complete my thought" type of question, wherein the teacher supplies the linguistic structure that represents the causal link between sentences and the pupils complete the sentence. For example, in a lesson where the third-grade class was reading a story called "Dance, Polly, dance," there was the following sequence of questions:

Teacher: So Polly just kept....?

Children (in chorus)*: Dancing.*

Teacher: Polly didn't want to dance because she was too....?

Children (in chorus)*: Shy.*

Teacher: Why did Polly run off the stage? Children, you must follow in your books!

Children (in chorus)*: She was afraid.*

There were times when the children gave possible acceptable answers, which the teacher ignored as she was looking for a particular answer. The following is a typical example from teacher Beatrice:

Ms. Beatrice: If we don't eat our food and drink our milk, how will we grow?

Tim: Stay small.

Susan: Won't grow good (Teacher ignores responses)

Tye: Get sick. (Teacher continues to point to several other children till she gets the right response)

Kadian: Unhealthy.

Ms. Beatrice; Yes, unhealthy. If you are not happy, you are ?

Tom :Sad.

Ms. Beatrice: Yes, but I want another word.

Sam: Gloomy, miss.

Tanya: Don't feel good, miss. (Teacher points to different children to respond, but makes no comment on responses given, until she gets the right answer)

James: Unhappy, miss.

Ms. Beatrice: Yes, unhappy.

In a special unit in a primary school, teacher Molly made a bold effort to implement what she could of her training in the use of the constructivist approach to learning. The class consisted of nine children between the ages of 7 to 13, four of whom were severely disabled and the remainder mildly disabled. A teaching assistant helped Molly with the severely disabled. Molly organized the others in a group, with the exception of one boy who was made to sit to the side of the room by himself "because he causes trouble and upsets the others," she explained. Molly gave a copy of a poem titled "I can, We can" to the children and then read the poem to them, because she said "they can't read, but can follow on the paper and recognize words like "I," "We," "Can." Molly tries to get the children to relate the poem to their own experience. She asks them about the things the child in the poem can do. She gets responses like "blow," "sing," and "hum." She asks the children about the sort of things that they do and gets one response, "eat mango." Then Molly put up a chart on the chalkboard with words beginning with "M" and corresponding pictures. She tried to get the children to be more active and involved by asking each child to go the chart and point to a man, the moon, and a monkey.

Molly: Where do you find the moon?

Child B: Up a God (Jamaican Creole for "where you find God")

Molly: What is a monkey?

Child C: A human being.

Child D: No, animal.

Molly: Yes, an animal. Good! (loud applause from rest of the class)

*Molly: Give me another word that begins with "M." (*She gets no response despite her coaxing). *Well a day in the week begins with M. What is it?*

Child A: Monday. (loud applause from class)

Use Varied Forms of Assessment

Paper and pencil tests and oral questioning are the most frequent types of assessment used by teachers at the primary level. In outlining an example of seatwork teaching (i.e., "teaching that relies mainly on the completion of exercises, on passing on little bits of knowledge unrelated to anything meaningful or to students' experiences" (Evans, 2001, p. 86)), most of the time is spent with children working individually on an assignment while the teacher sits at the teacher's table and corrects work. In a constructivist learning environment, teachers are expected to use authentic assessments in that they use the work which students produce in daily classroom activities as evidence of their capabilities. Examples of these alternative forms of assessment are projects, in-class presentations, portfolios, journals, and notes on observations of the children in collaborative learning activities.

While old habits die hard, a definite trend can be observed where teachers are using more varied forms of assessment, in particular journals and portfolios. One teacher noted how some children in her class work well on projects and get very excited when told that they should do research in the library. These are the same children who will not turn up for school on the day that they know they have to do a written test. She found portfolios particularly useful. She saw these as purposeful collections of students' work that demonstrated effort and achievement over time. She described her experience in using portfolios thus:

So at the beginning of the school year I would set aside a day for the children to make their own

portfolios. As the school year progresses pieces of their work are placed in them from lessons done. This does not necessarily have to be their best work, since the idea is for them to see their progression throughout the year....When I use portfolios, I usually identify the pieces of assignments that are expected in each. However, I also give students opportunities to choose materials to be included...It is always a joy to see the excitement on their faces when they look at their portfolios and see the progress they have made. Some students even talk about the progress made in their style of writing. Even the slower students will have something to celebrate.

This teacher further remarked that in parent conferences the portfolios served as good evidence to parents of their children's progress. Her analysis of the portfolios enable her to make adjustments to her own teaching, and focus on the growth and progress of her students "rather than a snapshot of their abilities at a particular time."

School Facilities and Resources

Active learning is an integral aspect of the constructivist learning environment. This is manifested not only in such activities as role play and in getting children to do and make things, but also in exercises that challenge their use of higher-order thinking skills. But such a learning environment should also enable group arrangements so that children can engage in collaborative learning. Herein lies the challenge in many classrooms in Jamaican primary schools. The situation is summed up by a primary school teacher, who in her essay described how she tried to engage the interest of the children by setting up a class library and reading corner, and using interactive charts and models, many of which were made by the children themselves. She added:

Although I try to exhibit these types of behaviours, I have been faced with conditions, which make some of my good intentions non-feasible or not very practical. The old three-seater heavy wooden benches pose an unbearable challenge to grouping and re-arranging of the class. These desks are so designed that they take up most of the classroom space. Consequently, when groups are being formed they are not obviously separate. This

sometimes causes disturbances of the groups' concentration on tasks. The situation is made worse due to large classes, with three students sitting in one bench. All these lead to discomfort and hyperactivity among the students. These types of effects often made me prefer the teacher-centred approach, where I 'tell' the one large group of students what to do and get 'the job' done peacefully.

This teacher went on to lament the scarcity of resource materials, especially for the teaching of science, with the result that "instead of taking a discovery, investigative or constructivist approach to the teaching of science, I most times have to tell students the results of hypotheses."

Implications of the Findings

Teaching and Resources

Over two decades ago, Jennings-Wray (1984), in a study on implementing the integrated approach to learning in Caribbean primary schools, noted that:

in primary schools such as those in Jamaica, not only will teachers need to be re-oriented to a new role and more enlightened teaching methods in their training programmes, but schools would also need to be supplied with adequate physical and material resources. (p. 275)

While training programmes have responded to this demand, the physical conditions in most schools have remained the same. There are only a few schools that have desks and chairs made of light durable materials which the children themselves can easily move around. Another problem that Jennings-Wray highlighted also still persists two decades later—that is, the lack of storage space in classrooms. This deters many teachers from making mobiles and charts as they are easily vandalized. Teachers who work in shift schools, in schools in volatile communities, or schools that are used by the community for different purposes after school hours report that they are discouraged from making resource materials as they are vandalized. One teacher on the first shift reported that after she had warned a group of children on the second shift not to damage her charts, she

returned the next morning to find some unspeakable expletives on her chalkboard. It is challenges such as these that serve to demotivate even the teachers who are converted to constructivism, as we hear in the anguish of the teacher who said that "*these types of effects often made me prefer the teacher-centred approach, where I 'tell' the one large group of students what to do and get 'the job' done peacefully*."

Most schools have limited resources, and because some teachers have unsupportive principals who do not make the effort to provide them with needed materials, the teachers themselves have to provide the materials they need. Some teachers like Ms. Kelly and Ms. Molly are prepared to do this. Ms. Molly's special education unit had many mobiles and charts that she had made with the help of the children, and pictures and exercises that she had downloaded from the Internet, printed, and copied for the children. This was all at her own expense. Teachers like Ms. Beatrice simply blamed the principal for not providing the resources and did nothing else.

The Need for a More Holistic Approach to Training

Jennings-Wray (1984) noted the difficulties that teachers had in planning lessons for integrated studies, and the sense of "revelation" on the part of some teachers when it dawned on them that they could function other than as "givers of knowledge," since their own pupils had knowledge derived from their own experiences, which they could utilize in their lessons. These shortcomings, as well as the teachers' lack of confidence in teaching Integrated Studies, were attributed to weaknesses in initial teacher training programmes (Jennings-Wray, p. 274). Over two decades later, while the situation has changed somewhat, there are still certain practices that persist. Teachers no longer have to struggle to integrate the curriculum themselves, because those in the lower primary grades have been provided with an holistic curriculum integrated at a high level by specialists in the CDU, and the teachers' colleges have revised their Primary Education programme to include training in integration. In implementing the curriculum on a day-to-day basis, however, we see a general persistence of

teacher-dominated instruction using closed questions that elicit "right answers," which runs contrary to the spirit of constructivism. But change is a slow process and the challenge is to develop in the system more teachers like Ms. Kelly. However, this is not just a matter of teacher training. It has to do with the teachers' personality, disposition, commitment, and the extent to which they are prepared to "go the extra mile" in terms of effort to prepare the teaching/learning resources needed to keep the children motivated throughout the lesson.

The extent to which a teacher training programme can change such attitudes is limited. This requires ongoing professional development, with the school playing a decisive role. In this regard, the training of the leadership within the schools becomes critical. At the workshop held with teachers in the pilot schools in April 2007, many teachers commented on how their principals were unsupportive of the holistic approach to teaching literacy to which they had been exposed. One principal, for example, insisted that a lesson should focus on only one idea at a time, whether it be reading for fluency or word recognition, but not both. Furthermore, they pointed out that when the Education Officers visit the school, they have no idea about the new methodology. What this underscores is the need for more holistic approaches to training. It becomes unproductive if teachers are trained in a new methodology and the principals and education officers who supervise and assess the teachers are not included in such training. Teachers are caught up in a web of conflicting opinions and invariably they will bend to the wishes of their assessors.

Preserving the Best of Direct Instruction

What also emerges from the findings so far is that teacher training programmes cannot restrict themselves solely to training in the use of the constructivist approach to learning. To throw behaviourism out altogether is like throwing the baby out with the bathwater. Ms. Molly gave her class of special needs students the opportunity to talk and express their views, but the responses were limited and she often had to resort to direct instruction. Systematic planning and preparation were strong features of her teaching. Steele (2005) highlighted positive aspects of behaviourally

oriented approaches that are particularly effective with children with learning problems. These include extensive practice, a great deal of structure, and systematic planning. Such features, she said, should be combined with the more popular ideas associated with constructivism. It is estimated that the special needs population in Jamaican schools is between 12%–24%. These children are at risk and in need of special intervention, and yet less that 1% of these are being given attention in special education programmes (Jamaica. Task Force on Educational Reform, 2004). Bearing this in mind, the question arises as to whether we should not be harnessing the more positive aspects of direct instruction, and perhaps combining these with such aspects of the constructivist approach to learning as teachers find more manageable in their classrooms.

Conclusion

Teachers vary in the ways in which they meet the challenges of implementing a constructivist approach to learning. In the absence of teaching/learning resources, some create their own with the assistance of the pupils. In small, overcrowded classrooms where there is little room to move, some use seatwork activities that absorb the children's interest and challenge them to think, while others resort to teacher-dominated instruction in which the children simply complete the thought processes of the teacher. The physical condition of schools and classrooms is one of the factors that cause teacher-dominated instruction to persist, because the schools and classrooms were designed for a behaviourist approach to teaching. We impose the constructivist approach to learning, which requires space, resources, and a wealth of materials, in classrooms that were designed for direct instruction. A wholesale redesigning of schools and classrooms to implement new ideas is hardly possible in constrained economies like Jamaica's. Research into the positive aspects of direct instruction that are most conducive for learning in our unique contexts, and combining these with constructivism seems to be the way forward in the future.

References

Bailey, B., & Brown, M. (1997). Reengineering the primary curriculum in Jamaica: Improving effectiveness. *Caribbean Journal of Education, 19*(2), 147–161.

Beane, J. A. (1997). *Curriculum integration: Designing the core of democratic education.* New York: Teachers College Press.

Brooks, J. G., & Brooks, M. G. (1993). *In search of understanding: The case for constructivist classrooms.* Alexandria, VA: Association for Supervision and Curriculum Development.

Caine, R., & Caine, G. (1991) *Making connections: Teaching and the human brain.* Alexandria, VA: Association for Supervision and Curriculum Development.

Craig, D. R. (2006). *Teaching language and literacy to Caribbean students: From vernacular to Standard English.* Kingston, Jamaica: Ian Randle.

Dewey, J. (1938). *Experience and education.* New York: Collier Macmillan.

Duhaney, D. C., & Duhaney, L. M. G. (2000). Assistive technology: Meeting the needs of learners with disabilities. *International Journal of Instructional Media*, *27*, 393–401.

Ellis, E. S. (1997). Watering up the curriculum for adolescents with learning disabilities: Goals of the knowledge dimension. *Remedial and Special Education*, *18*, 326–346.

Evans, H. (2001*). Inside Jamaican schools.* Mona, Jamaica: University of the West Indies Press.

Jamaica. Ministry of Education. (1980). *Foundations of Self-Reliance: A curriculum guide for the primary stage of education.* Kingston, Jamaica: Author.

Jamaica. Task Force on Educational Reform. (2004). *Report: A transformed education system.* Kingston, Jamaica: Author.

Jennings-Wray, Z. D. (1984). Implementing the 'integrated approach to learning': Implications for integration in the curricula of primary schools in the Caribbean. *International Journal of Educational Development, 4*(4), 265–278.

Myers, S. (1989). Reading performance of Jamaican Grade 6 students. *Caribbean Journal of Education*, *16*(3), 189–210. (Special Issue: *Primary education in the Commonwealth Caribbean*, edited by D. G. Wilson, in honour of R. N. Murray)

Steele, M. M. (2005). Teaching students with learning disabilities: Constructivism or behaviorism? *Current Issues in Education [On-line], 8*(10*).* Retrieved March 29, 2007 from http://cie.asu.edu/volume8/number10/index.html

Instructional Materials Development for Primary Spanish in the Caribbean

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Abstract. In recent years, several Caribbean countries have stated their commitment to implement Spanish as a foreign language in the primary school curriculum. This initiative exposed certain needs: syllabus, teacher training, and instructional materials. Our experience through the Spanish Pilot Project in the University School made us aware of the factors required to make this implementation feasible: we had the syllabus, we were trained teachers, but materials were not suitable for Primary Spanish in the Caribbean. This paper contextualizes our experience in that project for the implementation of Spanish in primary schools in Trinidad and Tobago. Then it analyses the choices made regarding syllabuses and methodology in the creation of instructional materials, and relates them to the theories of second language acquisition.

Introduction

In Trinidad and Tobago, the Ministry of Education had a pilot project for the implementation of a Spanish syllabus in 15 primary schools from August 1999 to May 2002. In 2004, the Government of Trinidad and Tobago declared Spanish as the First Foreign Language (SAFFL), and in September 2004, Spanish was included in the National Curriculum at the primary school level. However, its implementation has yet to be mainstreamed.

This research started in 1999 when Dr. Sylvia Moodie-Kublalsingh shared her idea of implementing Spanish in the University School as a pilot project of the Centre for Language Learning (CLL) at The University of the West Indies (UWI), St. Augustine. Our own teaching experience and the interviews we conducted in 2002 of the teachers involved in the Ministry's pilot project made us aware of the two major obstacles to the optimal implementation of the national curriculum for Primary Spanish: the training of teachers and availability of suitable instructional material.

From 2000 to 2005, Spanish was gradually implemented at the University School. Our focus moved from adapting the national curriculum, creating materials for our teaching, and in-class research about how and what children learn better, to conducting peer observation to analyse the

impact of our teaching. Finally, we delivered a workshop for primary school teachers to share our approach and obtain feedback. In this process, many decisions were made regarding contents, skills, and sequencing, but our overall major concern was the methodology. One reason why children find learning second languages in school difficult may be that they are taught in the wrong way, while another reason why children fail to learn a second language well in school relates to understanding what they have to learn (McLaughlin, 1984, p. 2). This paper reflects on the choices we had to make when preparing the instructional material that would be the vehicle through which the children would experience the language.

Motivation: Why Create Instructional Materials?

In our teaching at the University School, we initially used some textbooks for Primary Spanish available in the North American and European markets. However, we realized that they did not fit our context. They followed an engaging communicative method and the topics were quite similar; however, they presented the following: problems:

1. The illustrations representing people and places did not apply to the Caribbean reality for

children to relate to, which is an essential affective factor for meaningful learning.

2. Some linguistic content did not refer to the Caribbean world, for example, teaching *cherry, pear, and peach* is far from the immediate Caribbean fruits children need to express.

3. The variety of Spanish presented was mainly from Spain, which is unlikely to be the variety of Spanish Caribbean speakers may encounter.

4. They followed a different sequencing of the content. Most of them were articulated in three levels, while the Caribbean syllabuses were structured in four (Barbados), six (Jamaica), and seven (Trinidad) levels.

At that time, we searched for instructional materials created for the Caribbean, and there was none available, so we started creating our own. Later we found two series and our observations are the following:

1. *Olé* (Mandara, 2005)

   - it is divided in four levels
   - illustrations are in red and blue
   - there is no story line or characters that are sustained through the series
   - it contains grammar boxes
   - writing is introduced in Level 1
   - directions for activities are in Spanish, and translation is used for vocabulary, even when an illustration is present
   - there is neither a teacher's guide nor CD component

2. *Chispas* (Martin & Martyn, 2005)

   - it is divided in four levels
   - illustrations are in full colour with a Caribbean flavour
   - there is no story line that is sustained through the series
   - it includes grammar boxes
   - writing is introduced in Level 1
   - there are additional workbooks for Levels 3 and 4
   - directions for activities are in Spanish and translated into English. Translation is also

   - used for vocabulary, even when an illustration is present
   - there is a teacher's guide with a CD recorded with adult voices

Studies suggest that some of these features, such as the translation (Coleman & Perez, 2005) and grammar explanations, may hinder the learning process at this level. On the other hand, those missing elements such as story line, full colour illustrations, and audio recordings with children´s voices make learning more meaningful.

Theoretical Framework

Our beliefs stood on three pillars: Gardner's (1983) multiple intelligences theory; target language exposure versus translation; and Ausubel's (1968) meaningful learning concept.

In their application of neurolinguistic programming in the language classroom, Revell and Norman (2000) explain how differently we experience reality: "There is a world. And there is our experience of the world. They are not the same thing …. We also differ in how we experience the world and how we represent reality in our minds" (p. 26). Using the parallelism, we would say that there is a language but that there are different individual experiences of this language, which will depend in the first place on the kind of exposure to it. We all see, hear, feel, and experience a language, but we all do so in different ways and to different degrees depending on variables like gender, age, jobs, interests, and background. This thought made us aware of how influential the first contact with a foreign language is. We had to acknowledge that there are different pupils and different ways of experiencing language, and that we had to provide opportunities for everyone. Use of illustrations, audio material, music, physical games, and group and individual activities had to be integrated in order to reach everyone.

Language is not a mere vehicle for content; it is a whole vision of the world, that is why teaching to think in the target language is a rewarding aim:

No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with

different labels attached .... We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation. (Sapir, 1929, p. 69)

Meaningfulness helps language acquisition, which will be more effective when:

1. the content is related to the child's experiences: family, friends, animals, school;

2. the content captures their attention because it is more memorable;

3. new knowledge relates to previous knowledge. We used the Social Studies syllabus of Trinidad and Tobago to integrate cross-curriculum references about geography, history, citizenship, health, for example, our community, our culture, our island, physical features, resources, the world around us;

4. the skills are taught with a purpose: sing, recite, perform, play;

5. the language is integrated in a text, for example, poem, prayer, story at the end of the book.

Negotiating with the Syllabuses

In a study of language textbooks, Zayas and Rodriguez (2003) state that the concept of the textbook depends on the flexibility of the curriculum, on the terms in which the objectives are expressed, and the teaching independence given to teachers. In 1996, Parcerisa´s research (as cited in Zagas and Rodriguez, 2003) confirmed teachers' dependency on the textbook as the exclusive teaching resource, which results in authors and publishers becoming primarily responsible for the teaching practices in schools. In the context of the Caribbean, we were aware that the textbook could become the only guiding resource, since most teachers would not be specialists in the area.

Zayas and Rodriguez (2003) also declared that second language textbooks have changed in an attempt to fit three purposes: teaching skills versus concepts, integrating skills, and, finally, focusing in a communicative approach (use in context, no translation).

In pursuing our objective of creating materials for the English-speaking Caribbean, we examined the syllabuses of Trinidad and Tobago (1998), Barbados (2000), and Jamaica (2003). It was enriching to work with three syllabuses since it allowed us to take the best of each one. In our search for a common ground to negotiate their differences, we focused on their common objectives:

1. To develop a positive attitude towards second language learning by providing motivating activities that would integrate cross-curriculum content.

2. To promote social development by encouraging children to appreciate different cultures and values (ethnic groups, beliefs, music, etc.) in Spanish-speaking countries.

3. To familiarize children with a new language and to establish an oral solid basis— understand and express simple information about their immediate world.

The three syllabuses formulated the specific objectives in terms of skills:

- Trinidad and Tobago (1998): ask and give information, identify, express agreement/ disagreement, likes/dislikes

- Barbados (2000–2002): identify, recognize, understand, reproduce, respond, inquire, ask, greet, introduce, apologize, express like and dislike, describe, follow commands

- Jamaica (2003): expresses the objectives in terms of four types of development:

  - psychological (expressing respect and emotions, following routines and healthy habits, sharing, promoting team work)

  - cognitive (identify, describe, classify, expanding knowledge)

  - ethical (appreciate differences, respect environment, acknowledge contribution, promote solidarity)

  - psychomotor (prompt physical response to cues)

The initial difference we had to solve was the division in levels of the three syllabuses: Barbados had four levels, from 7- to 11-year-olds. Trinidad had seven levels, from 4- to 11-year-olds. Jamaica had six levels, from 6- to 12-year-olds. We decided to divide our materials into five levels from Standards 1 to 5 (ages 6 to 11).

Although topics and functions were basically the same in the three syllabuses, we had to negotiate the placement of functions with levels, for example, telling the time: Jamaica (Level 1), Trinidad and Tobago, Barbados (Level 3). We placed it in Level 3 because it is a very difficult skill, which children sometimes take long to learn in their mother tongue. As Lessow-Hurley (2003) states "the concepts and skills that students learn in one language transfer to another (…). This is particularly true for small children, who have not fully grasped basic concepts (p. 33).

Methodological Approach

The pedagogic tradition and beliefs are ideas established through our personal experience in a constructive social process. Some language teachers believe that translation helps the learning process because that was their personal learning experience.

In the 18th century when modern languages began to enter the curriculum of European schools, textbooks consisted of statements of abstract grammar rules, lists of vocabulary, and sentences for translation. Speaking the foreign language was not the goal. By the 19th century, this approach had become the standard way of studying foreign languages. The principal focus was reading and writing. Accuracy was emphasized, and the student's native language was the medium of instruction. Grammar was taught by the study of grammar rules. This method is still widely used but it has no advocates. There is no literature that offers a rationale for it or relates it to issues in linguistics, psychology, or educational theory (Richards & Rodgers, 2001).

From February to April 2005, we had a workshop with primary school teachers who were teaching Spanish in their schools or who were planning to do so. In the first instance, due to their own experience as learners when they were exposed to the different instructional materials created for the Caribbean, they felt more comfortable with the books that used the translation of the vocabulary, although it had illustrations to convey meaning. They wanted to translate every word of the songs. After the workshop their beliefs had shifted. Their new learning experience in the workshop persuaded them of the effectiveness of the change. In the workshop, translation was used for abstract concepts when there was no real reference, illustration, and so on. They were convinced as well of the advantage of using Spanish in class, despite the fact that they could not understand everything: "*Initially it was difficult to grasp and I wondered if I was in the right class or I should give up, but after a few classes I caught on and I was able to understand*" (anonymous evaluation questionnaire respondent).

We followed the communicative approach encouraged in the three syllabuses but also the Task-Based Language Teaching (TBLT), which uses tasks as the core unit of instruction in language teaching. Nunan (1989) offers this definition:

> the communicative task [is] a piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is principally focused on meaning rather than form. The task should also have a sense of completeness, being able to stand alone as a communicative act in its own right. (p. 10)

TBLT is presented as a logical development of the communicative approach since it draws on several principles of that movement from the 1980s. Our choice of activities followed TBLT criteria, as summarized by Richards and Rodgers (2001):

1. Purposeful activities that emphasize communication and meaning, for example, singing songs, reciting a poem, performing a skit.

2. Tasks that learners might need to achieve in real life, for example, buying something, reading a map, finding a solution to a riddle, writing a letter, giving directions, reading and organizing a set of instructions.

3. Activities that have a pedagogical purpose specific to the classroom, for example, information gap activities in which students, in pairs, have to ask for the information they are missing; as well as activities implying guessing, calculating, solving a problem, observing, researching, and art projects.

4. Activities that engage learners by purposeful collaborative interacting. Games allow natural communication practice since pupils are focused on extra-linguistic objectives. The learning involved justifies the noise produced, for example, board games, card games, physical games, and competitive and cooperative games.

In this approach, Gardner´s multiple intelligences were integrated as well: visual, linguistic, mathematical, musical, spatial, kinesthetic, intrapersonal, interpersonal, naturalist.

Skills and Strategies

In the past, the books suggested the practice of the skills separately. This approach enabled the teacher to see what the focus was without the need of a teacher's guide and it seemed to be easier for publishers to market the materials. Studies have proved that integrated skills make the learning process more meaningful and, currently, most books have that approach, although it demands a teacher´s guide. In the textbooks created for the Caribbean, skills were integrated but, curiously, the one without the listening component—no CD—had no teacher´s guide either.

Storytelling supported by illustrations is a methodology extensively used at primary level. Children like illustrations because these stimulate their imagination and are motivating. They are particularly effective as they offer a good context for content. Images and gestures facilitate understanding and children start developing textual skills. Stories should be simple, repetitive, and striking. They can include songs or rhymes. They can memorize them and act them out (Escribano, Utrilla, & Ventosa, 2003).

A story was created as the leitmotif of the series, which allowed the easy integration of skills. The characters are used as links in the different units, and at the end of each book the content is summarized in a short story. The characters of the series integrate races, genders, religions, and ages. Characters allow the children to identify with their reality, for example, the pregnant mom, the child with glasses, the style of dress, and so on.

Although skills are integrated, priority is given to aural skills development: to get pupils accustomed to hearing, identifying, understanding, and, finally, producing Spanish.

The neurophysiological aspect of being in a growing stage makes it easier for children to acquire language. They are better able to handle their motor skills such as the control of the muscles involved in speech production—tongue, lips, and so on—to produce different sounds. After early adolescence it is harder to acquire new motor skills (McLaughlin, 1984). Regarding pronunciation, we observed that as long as students do not see the word written they repeat the teacher´s model correctly. However, if they happen to read the word *verde* for the first time, they will apply the rules of their mother tongue and will pronounce it like /v/. The conclusion is that pupils should not see the word written until they have internalized the correct pronunciation. Later on, they will make the connection between letter and pronunciation.

This is the best time for the child to acquire new sounds; the other skills like reading and writing, which require higher cognitive skills, can be acquired later when the speaking and listening skills are mastered. First we integrated oral and illustrations; then oral, illustrations, plus reading. In Level 3, pupils started controlled writing: tick, draw, classify, match, complete, and number.

Listening

The most natural way for children to be exposed to the language is by listening to contextualized simple information in order to prompt verbal and non-verbal response. Progressively, our pupils had to listen and look/repeat/sing/gesture/do/number/circle/tick/ match/predict/identify/guess/read/draw/complete/ write. A verbal feedback is not always expected as Dulay, Burt, and Krashen (1982) indicate; there is the need for a silent period in which students have an input but a time is allowed until they produce verbal communication: "One way communication is a self-imposed constraint which language

learners seem to require in order for the acquisition process to unfold most naturally" (p. 23).

Reading

In our teaching practice, pupils read the song after learning it aurally. They do not read illustrated words in a list, but they read short and simplified texts that are contextualized and illustrated: song, poem, rhyme, dialogues. We aimed at the integration of literature and language: literary texts are sources in which all kind of communication can be found (Brumfit & Carter, 1987). Popular rhymes and poems by prestigious Caribbean writers such as Nicolás Guillén, as well as pieces from the Colombian, Rafael Pombo; Spaniard, Gloria Fuertes; and Cuban, Alma Flor were successfully used. In Level 5, pupils had to write a poem and perform a skit of "Don Quijote en el Caribe." This early interaction trained their literary competence.

Speaking

Speaking is the result of a process: pupils move from repeating > reciting > choral questioning > individual questioning > controlled ask around > role playing > theatre into more creative conversational skills.

Pupils responded enthusiastically to the recording done with children´s voices: songs, chants, rhymes, poems, stories, dialogues, sketches, vocabulary. Regarding target language models, Dulay, Burt, and Krashen (1982, p. 29) explain how research provides examples of preference for peer speaker models of the target language over adults. The CDs serve as support for the pronunciation and provide familiarity with a variety of regional accents (Venezuela, Colombia, Spain, Ecuador). The Latin American varieties were prioritized for geographical proximity reasons.

Writing

Writing is introduced at different stages in the syllabuses used: Trinidad and Tobago's at Level 1, Barbados' at Level 3, and Jamaica's at Level 4. In the textbooks we examined, writing was expected

in Level 1 in *Chispas* (Martin & Martyn, 2005) and in Level 2 in *Olé* (Mandara, 2005).

In our class observation, pupils in Level 1 did not seem to have any need to write down the words the teacher introduced. In a Level 2 class, when the teacher presented vocabulary, only 3 pupils spontaneously wrote the word the way they heard it, 13 pupils drew the referent, and 12 pupils drew and wrote. This alerted us to their growing need to start representing language.

In our materials proposal, writing is increasingly used in the last courses: in Level 3, from filling in words to ordering sentences or producing a guided and modelled letter. The postponement of writing is based on the priority given to aural expression, the lack of a need to express in writing, and to avoid interfering with the learning of their mother tongue.

Grammar

Grammar does not need to be taught explicitly to children since, as Ruiz Bikandi (2000) explains, linguistic structures are learnt in a contextualized use of the language. Although children do not pay attention to the form, they learn it because they have a genetic capability to do so, when they use it with somebody who has mastered it and they are using the language for an activity they like. The language becomes the instrument that serves the purpose of the activity; that is what is meaningful to them. The language is not an end in itself.

In the Primary Spanish books for the Caribbean, we observed that there were examples of dependency in the explanation of grammar points. Reflecting on how languages are learnt, Ruiz Bikandi (2003) explains that:

> the acquisition of the basic syntax in the mother tongue is not achieved before the age of six, and even some aspects are not mastered until adolescence. In the case of a second language, the syntax is learnt faster in adolescence, since the development of the cognitive skills facilitate the assimilation of rules.(…) To correct mistakes and to improve the linguistic competence, the learner needs to be aware of the form of the language. The written language is the best exponent to observe the language and analyse its use.

In the mother tongue writing happens quite after the oral acquisition, but in second language can be acquire simultaneously. (pp. 40–41) [authors' translation of Spanish text]

In our approach, we had children use the language in games and poems; they would repeat and eventually infer rules. Since abstract grammatical concepts are difficult for a 6-year-old pupil, in our practice we did not try any grammar explanations until they inquired about it, which will happen when they have acquired that dimension in their mother tongue. We would explain when they inquire about it, which means they are trying to infer patterns and rules.

Integration of Illustration

To decode iconic material is a complicated cognitive process, which engages a neurological system to perform deductive functions based on previous knowledge and a context. However, we live in a visual society, and from an early age we are used to being stimulated by visual signs and we become quite trained at that.

We all know how a good illustration helps in understanding a text, but our question was what makes an illustration good. Kovacevic (2004), in her analysis of the use of illustration in Spanish as a Foreign Language textbooks, classifies the factors that influence the iconic reading into those that depend on the reader's cognitive development level, and those that depend on the image (size, clarity, complexity, colours, position, style, and the iconic-verbal coordination). We paid special attention to the style, relating it to the age of the pupils; we used different symbols in Levels 1 & 2 from those used in Levels 3, 4, & 5. Drawings were used in all the levels, but abstract images such as maps in higher levels.

Kovacevic (2004) also describes the double function of the use of images: (a) it is didactic: it gets the attention, provokes emotions and attitudes, and helps to retain the verbal information; and (b) it serves as methodology. This was our aim, to exploit illustrations not only to serve visual learners, but also to support the lexical, functional, or grammatical meaning, for example, use of colours to imply grammar changes, to support the understanding of texts, to

support the instructions for the activities, and to support the cultural content (food, religion, geography, ethnicity, gender, folklore).

Vocabulary and Varieties of Spanish

Memory can be understood as the capability to match sound or form and referent or meaning. As we said before, we supported this association with illustrations and real sounds: animals, weather, musical instruments, and so on. New words were illustrated and used in a context, such as a song. Some vocabulary was used for functional purposes but it was not expected to be learnt. We had to measure the number of words children can assimilate per lesson and per level. In Level 1, students were exposed to about 250 words, then it increased accordingly in each level.

There is only one rich Spanish language, which is spoken by over 380 million persons worldwide, then there is a variety of pronunciation, grammar use, and vocabulary (Alvar, 1996). Since there are different ways to express the same thing, and none is better than the others, we had to make choices in the basis of our target pupils. For example, when teaching to refer to the object "car," we could chose between the terms *carro*, *coche* or *auto*. Since our pupils live in an area closer to Latin America, we chose *carro*, which is the more common Latin American term.

We conducted some class research in Levels 1, 2, and 3 to check what words were easier for pupils to learn: In Level 1, we orally presented four objects that can be named with two possible terms each:

1. fridge > frigorífico/nevera

2. papaya > papaya/lechosa

3. glasses > gafas/lentes

4. subject > asignatura/materia

First, the guest teacher (from Spain) presented one term and then the regular teacher (from Venezuela) presented the other possibility, explaining that this is the way the item/concept is named in their respective countries. This group was not doing any writing yet, but to test what they remembered they were asked to figure out the spelling and write down the name of those

items/concepts in Spanish. Originally, we expected that because of the affective factor, pupils would remember the term their regular teacher had presented. However, out of the 26 pupils in the class, although many were not able to write anything, the outcome was as follows:

1. For the first word, fridge: 15 pupils wrote frigorífico and 1 frigorífico & nevera

2. For the second word, papaya: 17 pupils wrote papaya and 1 wrote papaya & lechosa

3. For the third word, glasses: 12 pupils wrote gafas, 5 wrote lentes, and 5 wrote both words

4. For the fourth word, subject: 6 pupils wrote asignatura and 1 wrote asignatura & material

Clearly they had more easily remembered the variety used in Spain, which was phonetically more similar to English than the variety from Venezuela. So we decided to teach what was easier for them to learn since those terms would be understood in the Latin American context as well. The least remembered word was "subject," which is an abstract word and difficult to illustrate as compared to the other concrete ones.

In a similar exercise in Level 2, they would remember the one phonetically more similar to the English one: papaya, carro, balón, frigorífico. Similar results were found in Level 3 with the words: asignatura, balón, frigorífico, carro, papaya. It seemed evident that the students would remember what is easy for them to relate to**. In this case, having a L1 as a referent served as a support to retain a word.

When there was a choice, we presented the term that was phonetically more similar to English, for example, papaya, balón (ball), frigorífico (fridge). Otherwise, we preferred the term that was more common in Latin America over the peninsular variety, due to the geographical proximity to the Caribbean. For example, we taught "lavamanos" instead of "lavabo," which is the term used in Spain. As well, we used "ustedes" instead of "vosotros," which is the term in Spain. On the other hand, when we have used popular songs from Spain that contained *vosotros,* we have mantained it, as well as *vos,* from Argentina, Uruguay, among others.

Another criterion that affected choice was if they knew a similar term: camisa – camiseta, or the possibility for using it in other combinations: gafas, gafas de sol, gafas de bucear.

We did some simplifications with the intention of facilitating learning: maxi-taxi, which does not exist in any variety but which everyone understands; melon was used for all kinds of melon (sandía, patilla, melón). As well, some questionable arbitrary decisions were made: la radio (Spain, Arg., Uru.) instead of el radio (Central America); la sartén (Spain), el sartén, (Latin America).

The Integration of Culture

Cultural tolerance starts early in life and it is a long-term consequence of foreign language learning. Kieran Egan (1997) explains how up to the age of 10—*the mythic stage*—children feel emotional about what they are learning, and they classify the world through binary categories: love/hate, good/bad. If they are positively introduced to another language and culture, this imprint will prevail and influence their future attitude. Learning a language helps children to know the culture linked to it—the world vision. This develops a sense of understanding that generates respect towards different cultures because one feels closer to them.

The language is learnt in relation to a sociocultural context. Learning a language is to learn to act in that culture. When we teach pupils to say *Gracias*, we are not teaching only the word but to be grateful in certain situations (Ruiz Bikandi, 2003). In using songs and poems, there are a lot of pragmatic factors associated with the language: a prayer or saying *Buen provecho* before a meal. The parranda presents a set of beliefs such as St. Joseph, Mary, and the Baby Jesus. Different cultural rhythms (salsa, reggae, rapso, etc.) and instruments (pan, maracas, drum, cuatro, castanettes) were used. Cultural instances of the great diversity of the Spanish-speaking world were represented as well as Caribbean ones.

The instructional materials we created have been recently published in a series *¿Preparados? ¿Listos? ¡Ya!* (Luengo, Albornoz, & Mora, 2007). It consists of five workbooks with CDs and a teacher's guide. The same way that it is impossible to put the ocean in a bottle, all the potentialities of

teaching Spanish could not be confined in a series of books. Hopefully, they will be new additional resources to create opportunities for children to learn. These materials served as a guideline that helped us, but did not prevent us from directing the teaching/learning process**.**

References

Alvar, M. (1996). *Manual de dialectología hispánica.* Madrid: Editorial Ariel, S.A.

Barbados. Ministry of Education, Youth Affairs and Culture. (2000). *Primary Spanish syllabus (2000–2003)*. Bridgetown, Barbados: Author.

Brumfit, C., & Carter, R. (Eds.). (1987). *Literature and language teaching* (2nd ed.). Oxford: Oxford University Press

Ausubel, D. P (1968). *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston

Coleman, J., & Perez, I. (2005). Translating and interpreting. In J. A. Coleman & J. Klapper (Eds.), *Effective learning and teaching in modern languages* (pp. 108–113). New York: Routledge.

Dulay, H., Burt, M., & Krashen, S. (1982). *Language two*. New York: Oxford University Press.

Escribano, T., Utrilla, I., & Ventosa M. R. (2003). ¡Vamos a aprender inglés jugando! *Teacherline, Term 3*(4–5).

Egan, K. (1997). *The educated mind: How cognitive tools shape our understanding*. Chicago, IL: University of Chicago Press.

Gardner, H. (1983). *Multiple intelligences: The theory in practice*. New York: Harper Collins.

Jamaica. Ministry of Education, Youth and Culture. (2003). *Primary Spanish syllabus*. Kingston, Jamaica: Author.

Kovacevic, V. (2004). Elementos icónicos en los manuales de E/LE. *Cuadernos Cervantes, 49*, 20–24.

Lessow-Hurley, J. (2003). *Meeting the needs of second language learners*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).

Luengo, E., Albornoz, R., & Mora, M. (2007). *¿Preparados? ¿Listos? ¡Ya!*. Harlow, Essex: Pearson-Longman.

Mandara, A. (2005). *¡Olé!*. Cheltenham, UK: Nelson Thornes Caribbean Spanish.

Martín, R., & Martyn, E. (2005). *Chispas*. London: Heinemann.

McLaughlin, B. (1984). *Second language acquisition in childhoood: Vol. 2. School-age children* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum.

Nunan, D. (1989). *Designing tasks for the communicative classroom*. New York: Cambridge University Press.

Revell, J., & Norman, S. (2000). *In your hands. NLP in ELT*. London: Saffire Press.

Richards, J., & Rodgers, T. (2001). *Approaches and methods in language*. Cambridge: Cambridge University Press.

Ruiz Bikandi, U. (Ed.) (2000). *Didáctica de la segunda lengua en educación infantil y primaria*. Madrid: Síntesis.

Ruiz Bikandi, U. (2003). ¿Cómo se aprenden las lenguas? *Cuadernos de Pedagogía, 330*, 38–41.

Sapir, E. (1929). The status of linguistics as a science. Reprinted in D. G. Mandelbaum (Ed.), *The selected writings of Edgard Sapir in language, culture and personality* (pp. 160–166). Berkeley, CA: University of California Press.

Trinidad and Tobago. Ministry of Education. (1998). *Primary Spanish syllabus*. Port of Spain, Trinidad: Author.

Zayas, F., & Rodríguez, C. (2003). Los libros de texto en los tiempos de la reforma. *Cuadernos de Pedagogía, 330*, 25–30.

The Problem of Generating a "Genuine" Social Studies

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Abstract. The goals of the social studies are about citizenship and developing persons. However, it has low status, tends to be marginalized, and is taught in much the same manner as the other disciplines even though "citizenship" suggests a seamless view of knowledge. This paper sets out the rationale for a research agenda to interrogate the problem of generating a genuine social studies. It does this by analysing the role played by learning theories—behaviourist, cognitivist, and humanist—in structuring the social studies learning environment in different countries and contexts. Theories of situated cognition provide a framework for investigating how teachers, educators, and students learn their environment, how they attempt to overcome it, and whether and how attempts at overcoming can be conceptualized more abstractly, leading to knowledge building in the social studies—more robust theories, concepts, propositions, and learning approaches. This study, then, is charting a way forward in reconceptualizing learning in the social studies so that citizenship and personhood can become more realizable goals.

Introduction

Much has been written about the ambiguous status of the social studies in the school curriculum—accountable for high ideals of good citizenship and becoming more human, and at the same time regarded as somehow inferior to the traditional disciplines of knowledge (Ross, 2001; Thornton, 2005). The fact that it cannot be pursued at institutions of higher learning and is essentially a "school" subject marginalizes its importance in the eyes of parents, teachers, and students alike to a great extent. As a result, over time, social studies advocates have tried to clarify the nature of the social studies (Armento, 1993; Lybarger, 1983; Saxe, 1992; Watras, 2004; Wronski, 1993), yet it cannot seem to overcome enduring critiques (Egan, 1983). The search is on for generating a "genuine" social studies; one more faithful to how it has been conceptualized by its founders and social studies writers and commentators, and one less influenced by the traditional attitudes and ideologies towards learning and knowledge in schools (Mohammed & Keller, 2004; Winch, 1958; 1997).

This article sets out a rationale for a research agenda that investigates the contexts of social studies teaching and learning in schools in different countries. An ecological approach promises to yield information on the environments in which social studies teaching and learning take place. Our main idea, which we want to pose for debate and discussion, is that people learn their environments and that the social studies suffers because of this (Lave, 1988; Lave & Wenger, 1991). It tends to be regarded as just another subject that can be transmitted as factual knowledge, and although there is more of a press today towards constructivism and humanist pedagogies, the social studies continues to be treated as "product" or a "given"—already fully worked out, as in a syllabus or a text. Even the notion of the good citizen is emphasized as output or a product rather than as an in-process, phenomenological issue.

Rationale

The social studies has long been entrusted with the goals of nurturing the good citizen and with becoming more human (Bohan, 2003; Carpenter, 2004; Mraz, 2004). This mission (Marsden, 2001), though, has been interpreted and re-interpreted in various ways (Crocco, 2004; Shudak & Helfenbein, 2005). For example, a fundamental divide in the arena of social studies education is whether it is highly disciplined—history being its main vehicle—or whether it is primarily interdisciplinary as suggested by its all-embracing purposes (Slater Stern 2006; Thornton, 2005; Whelan, 2001). At another level, there is the fundamental issue of whether it is about output—as suggested by "producing the good citizen"—or whether it is about process—investigating the

experiences of teachers and learners in exploring ideas about citizenship and cultural life (Trofanenko, 2005; Urrieta, 2005). These are major struggles that continue to obfuscate the nature of the social studies and how its original purposes (which continue in rhetoric) are to be achieved.

Despite valiant attempts to focus on the ineffable purposes of the social studies, it is still treated as a traditional discipline or, rather, as separate disciplines (Crocco & Thornton, 2002; Parramore, 1993). Attempts at overcoming this orientation tend to be neutralized by the dominance of the disciplinary curriculum. In response to the wide array of habits, dispositions, and knowledge required of the "good citizen," teachers have been harnessing an ever-increasing number of disciplines into social studies lessons, thus producing a multidisciplinary study that largely loses focus. However flawed, it represents an attempt to deal with these purposes that are seen as unique and which represent a challenge to many social studies teachers. By contrast, a different premise about the learner and knowledge starts with human problems and issues (for example, adolescent concerns in the secondary school), and attempts to build/interrogate ideas of citizenship and being better humans from such a foundation. In such a conception, the "disciplines of knowledge come into play as resources from which to draw within the context of the theme and related issues and activities" (Beane, 1995, p. 619). Starting from a "problem" invokes real-life situations and, thus, *the student as a source of knowledge* is emphasized over the discrete disciplines. Constructivist ideas about relationships between teachers, learners, and knowledge, though, have had mixed success to date, one reason being the "gatekeeping" actions of teachers, influenced largely by their beliefs and experiences of teacher education (Baker & Moroz, 1997; Pennell & Firestone, 1996; Smith, 2001; Thornton, 2005).

An ecological study that investigates the environments of social studies teaching and learning in different contexts is being proposed, in order to examine the understandings and/or ideologies related to knowledge and learning that underpin the curriculum in those places. Specifically, we are interested in the extent to which a genuine social studies is being generated.

A genuine social studies is understood as one where the social studies is rooted in the experiences and cultural life of the people in different contexts, and this knowledge is used to contribute to the developing body of concepts, propositions, theories, and ideas in the social studies.

Methodology

Situated Cognition

Various researchers interpret situated cognition differently, but it is usually applied to how concepts or the processes involved in learning practical tasks are learned more meaningfully in context (Brown, Collins, & Duguid, 1989; Lave, 1988; Lave & Wegner 1991; Núñez, Edwards, & Matos, 1999). The main idea in the situated cognition view of learning is that people learn best in practical, everyday situations, where they are called upon to complete a task within a natural setting among others from whom they can learn in a sort of apprenticeship role. Actually engaging in the learning tasks helps them to make connections, some of which they devise themselves, so that they learn much more than the steps in an activity, and achieve a holistic understanding of the processes, problems, and possible solutions that relate to that activity. What they learn is their environment, which makes the learning palpably different from learning the same things in a classroom where, traditionally, abstract knowledge is the logical place to start. In this paper, situated cognition is applied to how and what social studies students, teachers, educators, and other stakeholders learn about the social studies. Instead of applying it only to student learning of a concept, we are applying it to how persons generally learn the social studies learning environment. It refers to all the practices, assumptions, contradictions, and relationships between dominant and other paradigms that configure the environment of social studies learning in school. Remaining faithful to the metaphor, then, if we want to study environmental conditions we will need something of an ecological approach.

Bereiter (1997) proposes that understanding how people learn can be penetrated using a basic three-step model of cognition. Firstly, persons

learn their environment in a behaviourist fashion. Whether in a classroom or in a tailor shop, people learn what are the fundamental dimensions of a problem in that context. For example, even if a mathematics problem starts off with "Jane and Louisa have to divide 10 apples," students in classrooms know that the storyline is incidental and that the problem boils down to a case of manipulating numbers and computing. They therefore learn that problem solving is about arriving at the right answer—the "truth"—through a static series of rational steps, the algorithms, and reproducing the same steps to solve similar problems (Lave, 1988). In the case of real-world situations, learning takes place differently, but people still learn their environment. Lave's work among apprentice tailors in West Africa shows how having them iron finished garments or attach buttons and cuffs—the last stages in garment construction—contributes to a broad understanding of the whole process; later on they learn how to sew, and the very last thing they learn is how to cut (Lave & Wenger, 1991). For them, the environment is organized to stimulate learning that will eventually give a cumulative understanding of what a master tailor should know. In a similar sense, students, their teachers, and others learn what disciplines are like, what knowledge is, and who is a learner through experiencing the dominant learning approaches in our schools. Knowledge about the social studies, therefore, is learned within the parameters set by such learning environments.

Secondly, Bereiter (1997) says that people not only learn their environment but can overcome that environment. With the knowledge they have gained, they are able to create strategies, develop relationships, and modify practices to deal with problems and issues in their context. Overcoming their environment could mean, in the case of the social studies, the intention to organize multidisciplinary and interdisciplinary approaches to learning, as well as experiments with constructivist pedagogies and authentic learning. It can also mean the opposite, a determined push by the "social studies as history movement" to assert itself in new ways to overcome the ambiguities currently plaguing the field (Ravitch, 1989, 1991). Attempts to overcome the environment may or may not be successful depending on the extent to which one could really overcome. It is instructive to note, for example, that even today in the social studies, "American history textbooks, in general, present a white, middleclass, Eurocentric view of the world" (Zhao & Hoge, 2006, p. 428).

A third level or phase suggests that human beings are capable of thinking of their environment, relationships, practices, and how they have overcome them or are adapting to them in order to develop ideas in the abstract, which represent knowledge and understanding generally about such problems or issues that can be further refined in overcoming the environment. They can develop symbols to generate models to go beyond the environment. Bereiter (1997) likens this third level to Popper's World 3, and in this dimension we see possibilities of generating a more genuine social studies.

Knowledge Production

Popper (1979) portrayed the worlds we inhabit metaphorically as World 1 (the material world or the physical and human environment); World 2 (the mental and subjective world of individuals); and World 3 (that of knowledge objects—theories, concepts, propositions, abstract knowledge created by the human intellect). Traditionally, much of our learning involves bringing Worlds 1 and 2 together to learn our environment and to attempt to overcome it. World 3, consisting of immaterial knowledge objects produced by humans, has the capability to go beyond our local subjective knowing. Popper believes that treating our ideas and experiences as objects for further argument and scrutiny brings us nearer to a more "truthful" understanding of phenomena—"to a fuller, a more complete, a more interesting, logically stronger and more relevant truth—to truth relevant to our problems" (p. 148). Bereiter (1997) takes this position as providing a basis for escaping the situatedness of our learning by building knowledge.

Bereiter and Scardamalia (1993) posit that knowledge building differs from learning. The knowledge we produce and learn is situated because of the physical and social situation in which it takes place, but this knowledge has the potential to go beyond what normally constitutes the practices of a community. In education, there is a dominant notion of knowledge as content, and when the learner holds it in mind this is regarded

as understanding. This, however, is merely transmission and does not help us escape the situatedness of our environment. Bereiter (2002) later portrayed knowledge as a *resource* or *product* that can help us to extend and improve that knowledge, and in so doing bring a view of understanding as the establishment of a meaningful relationship between the learner and some knowledge object. The learner does not just hold it in mind. For example, in the social studies classroom (or any other), *problems* become the starting point for any study—problems of explanation. Theories, interpretations, evidence, ideas, experiences, and explanations become the "content" or "knowledge" that is studied.

Specifically, a study of citizenship should begin with problematizing the ideas and accepted narratives of who is regarded as a citizen and what citizenship is about. What explanations and ideas are emphasized in the text? What understanding of citizenship is being advocated—the process of becoming a citizen, being a citizen in terms of rights and obligations—or what misgivings, fears, and/or commitments are there in the notion of citizenship? How is being a citizen of the European Union different to that of being a citizen of Trinidad and Tobago? Taking apart the arguments, explanations, and theories of citizenship, using personal and collective experience as well as the knowledge in texts and other resources, focuses the learner on extending and deepening social studies knowledge—the so-called knowledge objects of theories, explanations, ideas, and so on. This is what Bereiter (1997) believes is *knowledge building,* and this is what we believe is important in generating a more genuine social studies. Such practices help to focus the learner on citizenship formation and human affairs as a shared or cultural study, valuing the importance of expression of experience and dialogue about experience. This is what a *social* study is about according to the fundamental purposes of becoming more social or more human—expressing, sharing, learning to accommodate other's opinions, developing a stance towards knowledge that is open-ended. Even if in social studies classes the experiences of the learner are encouraged, to a large extent this is done to enhance participation and interaction. World 3, however, asks that this knowledge which the student brings and is expressing has the

potential to be debated, discussed, extended, refined, and transformed, without reverting to the textbook in the end as the authoritative source.

Learning Our Environment: Learning Theories

The major approaches to pedagogy— behaviourism, cognitivism, and humanism— reflect different perspectives on curriculum, teaching, learning, learners, and knowledge. While all are represented in schools, behaviourist and cognitive approaches dominate, and it would seem that despite many efforts at reform, behaviourism continues to be the more pervasive (Bredo, 1997). Interrogating the ecological settings of social studies learning environments is likely to yield contextual clues about the influences of learning theories on how we learn our environment, our attempts to overcome it, and whether and how we are engaged in knowledge building.

Behaviourist Theories

The major tenet of this approach to pedagogy is that learning proceeds from manipulation of the environment. Known popularly as SR (stimulus-response) approaches, this view of learning sees knowledge as being organized by the teacher in suitable formats (graphics, rote exercises, learning objectives, motivational inputs, segments and sequences of activities/stimuli) for easy assimilation by students. There tends to be a generic understanding of learners and learning. While it is admitted that learners have minds to think with (a neo-behaviourist view), how the environment is organized is believed to be critical. Learning, then, is a process dependent on bombardment of the individual by stimuli from the environment—a process that could also be described as socialization through a transmission model. Knowledge on the whole is regarded as fixed; largely facts that have to be transmitted to the learner. Where the social studies is concerned, the location of the learner and the teacher in relation to the subject matter is treated as quite unproblematic and akin to what obtains in the traditional disciplines, even though the learner is preparing to become a good citizen or more human. In developing countries, a growing body of research bears out the fact that the social studies

continues to be delivered by expert authority and textbooks, and by teacher-directed learning experiences, which are then summatively assessed. This is especially true where the majority of teachers cannot access teacher education (Merryfield, 1988); where there are undemocratic political regimes or a strong religious orientation (White, 1997); where inherited authoritarian paradigms from the West are still privileged (Tabulawa, 1997); and where there is a press to maintain peace or the status quo by unifying nationalist narratives (Roberts & Locke, 2003). Interestingly, in Western countries, traditional paradigms also tend to persist even in the midst of a resource-rich environment, enlightened teacher education programmes, and democratic political systems (Levitsky, 2006; Werner, 1998). Mintrop (2003), in describing civic education says that:

> Despite demands of earlier reform periods, civic instruction at the turn of the century, according to the experts, is still traditional knowledge transmission and very teacher centred. Controversial issues that could foster critical thinking are avoided. The reports speak of a norm of 'conflict avoidance' (Hungary) or 'fear of politicization' (Italy). In the US report, this avoidance of controversy is described as fearing to be 'perceived as insensitive to any person.' (p. 448)

The dominance of the behaviourist paradigm (or transmission model) poses as problematic, it seems, the extent to which people can escape their environment; for despite numerous attempts at reform, traditional values and world-views continue. An ecological study of the social studies learning environment in different settings (including texts and other educational media) should contribute detailed knowledge about how people learn their environment, what they are doing when they try to overcome it, and what knowledge products are obtained.

Cognitive Theories

Largely reacting to the outward focus of behaviourism, cognitive theory moved the emphasis in understanding learning from the environment to the mind. A premium was put on identifying the various internal mental processes involved in an act of learning—memory, retention, retrieval, and schema building as in formulating categories and concepts. While behaviourists relied on learning by trial and error in manipulating the environment, cognitive theorists emphasized mental constructs to be tested by the learner. In other words, once a way of negotiating learning had been devised, it was "tested" in relation to being able to demonstrate learning. The field of instructional design, important in teacher education, developed around organizing teaching/learning acts to mirror what was learnt about how the brain processed information. However, strong behaviourist ideas such as the presentation and measurement of stimuli and response also became incorporated into learning approaches.

Bruner, like other cognitivists, viewed learning "as a product of thinking" (as cited in Bredo, 1997, p. 25), but went further to posit a close relationship between the learner and knowledge (the discipline). According to him, disciplines were bodies of knowledge with a logical structure represented by the sequencing of content, concepts, and propositions, but they also had a psychological structure making the learning of the discipline congruent with the mental processes of the student engaged in an act of learning (Bigge & Shermis, 2004). In positing a relationship between the learner and the thing to be learned, Bruner was trying to overcome the behavioural influence affecting other cognitivists; that knowledge existed apart from the learner. Bruner also went on to challenge prevailing ideas about the social studies. In the 1960s, he was instrumental in helping to develop a federally funded new social studies curriculum in the United States (US), which became known as "Man: A Course of Study" (MACOS). It deviated from traditional values and content based on history as a discipline emphasizing the Western experience, and tried to stimulate thinking about human beings in all their cultural diversity through an inquiry approach to learning. It focused on the common characteristics of tool making in human evolution, the role of language in culture, and that of social organization. It asked the important question in the social studies, "What is human about being human beings?" (Bruner, 1966, p. 74). We see a determined effort to overcome the social studies

environment that was anchored in behaviourism, but to a large extent the acceptance of the curriculum was thwarted by an appeal to restore what was traditional. The course was discontinued in 1976 because of widespread opposition citing that it did not cover much of the content expected in a social studies course, and that it opened to inquiry many cherished values in the American way of life (Evans, 2004).

Growing out of cognitive thinking is the conception of learning known as constructivism, based on how learners make meanings rather than how the brain organizes information. In this approach, the focus becomes more trained on the learner's interpretations of the world built up through experience and interactions. Today, this approach to teaching and learning enjoys widespread approval; yet, to a large extent, it remains problematic to implement, reflecting again perhaps the difficulty of overcoming our environment (Cook, Smagorinsky, Fry, Konopak, & Moore, 2002).

Humanist Theories

This approach places emphasis on the central place of meaning and feeling in learning. It underscores the notion that knowledge never comes without feeling, and this can be independent of the environment or the environment can be mediated by feelings. It is assumed that the learner always has feelings about what is to be taught, hence the premium placed on the needs, interests, experiences, dispositions, and feelings of the learner as the source of knowledge or starting place for instruction. Both Maslow and Rogers stressed the idea of agency or the ability of the learner to make significant personal decisions, the role of education in helping the learner to develop as an autonomous or self-actualized individual, and the major role that self-concepts play in this picture (as cited in Nemiroff, 1992). To be able to engage the learner, educators must be aware of how he or she is thinking about or reacting to some problem or issue in social life. Hence, educators must learn more about their students. Going beyond Bruner's (1966) idea that there is a psychological relationship between the discipline and the learner, in this view the knower and the known are inseparable—the learner is constantly engaged in learning, working out what

it means to be human, or developing as a person. However, the learner is not engaged with disciplinary knowledge per se but with his or her own needs and interests. Humanists see the disciplines as reflecting the different ways in which people express their orientation to some fundamental values—for example, geography demonstrates the relationships between human beings and the land; history and economics, too, reveal what others think are deep-seated values in social life. Humanists believe that these values and relationships are important for children to learn about as they are all dimensions of being human—how human beings have thought about life and society—but not as packaged disciplinary knowledge. The social studies would grow out of the problems and issues that children or adolescents face as they grow up, which help to reinforce, generate, or establish their values and attitudes. Humanists believe that these learning processes are going on all the time and the school has to intervene and enable that process.

Overcoming the Environment

Multidisciplinary and interdisciplinary efforts, as well as innovations in curricula and changes in learning approaches, have been variously employed in trying to overcome the environment of social studies learning. Essentially, this involved a re-thinking of the relationships between knowledge, learners, and teaching/learning approaches. That these efforts are not as successful as they were meant to be suggests that social studies learning environments continue to be sites where situated learning characterizes student learning. Efforts to overcome continue struggling with dominant traditions, ideologies, and standard ways of operating. Our proposed research project focuses on trying to understand, at various sites in different countries:

- the dominant and alternative approaches to learning generally and in the social studies specifically;

- how students learn their environment and how they overcome it;

- the conceptions of the good citizen or the human taught in social studies learning environments;

- how social studies teaching materials reinforce and/or question an output-related notion of social studies education;

- how social studies classrooms contribute to knowledge production in the field.

Developing a body of empirical evidence on the nature of social studies learning in different parts of the world should provide a sound basis for understanding what is regarded as social studies education and to what extent it is genuine, that is, emanating from the experiences and concerns of those learning to be the good citizen or being human. The researchers feel that following Popper's and Bereiter's way of thinking, they are engaged in a World 3 undertaking—interrogating and extending the arguments and explanations that shape the environments for social studies learning.

References

Armento, B. (1993). Reform revisited: The story of elementary social studies at the crest of the 21st century. In V. Wilson, J. Little, & G. L. Wilson (Eds.), *Teaching social studies* (pp. 25–44). Westport, CT: Greenwood Press.

Baker, R. G., & Moroz, W. (1997). Student and teacher perceptions of teaching/learning processes in classrooms: How close is the partnership? *Australian Journal of Teacher Education*, *22*(1), 1–38.

Beane, J. (1995). Curriculum integration and the disciplines of knowledge. *Phi Delta Kappan*, *76*(8), 616–622.

Bereiter, C. (1997). Situated cognition and how to overcome it. In D. Kirshner & J. A. Whitson (Eds.), *Situated cognition: Social, semiotic, and psychological perspectives* (pp. 281–300). Hillsdale, NJ: Lawrence Erlbaum.

Bereiter, C. (2002). *Education and mind in the knowledge age*. Mahwah, NJ: Lawrence Erlbaum.

Bereiter, C., & Scardamalia, M. (1993). *Surpassing ourselves: An inquiry into the nature and implications of expertise*. Chicago, IL: Open Court.

Bigge, M., & Shermis, S. (2004). *Learning theories for teachers* (6th ed.). Boston, MA: Pearson Education.

Bohan, C. (2003). Early vanguards of progressive education: The Committee of Ten, the Committee of Seven, and social education. *Journal of Curriculum and Supervision, 19*(1), 73–94.

Bredo, E. (1997). The social construction of learning. In G. Phye (Ed.), *Handbook of academic learning* (pp. 3–44). San Diego, CA: Academic Press.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42.

Bruner, J. S. (1966). *Toward a theory of instruction*. Cambridge, MA: Belknap Press.

Carpenter, J. (2004). Jefferson's views on education: Implications for today's social studies. *Social Studies*, *95*(4), 140–146.

Cook, L. S., Smagorinsky, P., Fry, P. G., Konopak, B., & Moore, C. (2002). Problems in developing a constructivist approach to teaching: One teacher's transition from teacher preparation to teaching. *The Elementary School Journal*, *102*(5), 389–413.

Crocco, M. S. (2004). Dealing with difference in the social studies: A historical perspective. *International Journal of Social Education*, *18*(2), 106–126.

Crocco, M. S., & Thornton, S. (2002). Social studies in the New York City public schools: A descriptive study. *Journal of Curriculum and Supervision*, *17*(3), 206–231.

Egan, K. (1983). Social studies and the erosion of education. *Curriculum Inquiry, 13*(2), 195–214.

Evans, R. (2004). *The social studies wars: What should we teach the children*? New York: Teachers College Press.

Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge, UK: Cambridge University Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.

Levitsky, R. (2006). Musings on meaning, meatloaf, and Moe: Reflections on "The state of social studies." *Social Education*, *70*(7), 405–408.

Lybarger, M. (1983). Origins of the modern social studies: 1900-1916. *History of Education Quarterly*, *23*(1), 455–468.

Marsden, W. (2001). *The school textbook: Geography, history and social studies*. London: Woburn Press.

Merryfield, M. (1988). Twenty-five years of social studies education in selected African nations. *Social Studies*, *79*(6), 281–287.

Mintrop, H. (2003). The old and new face of civic education: Expert teacher and student views. *European Educational Research Journal, 2*(3), 446–454.

Mohammed, J., & Keller, C. (2004). The social studies for a postmodern age. *Caribbean Curriculum*, *11*, 57–69.

Mraz, M. (2004). Harold O. Rugg and the foundations of social studies. *International Journal of Social Education*, *19*(1), 1–7.

Nemiroff, G. H. (1992). *Reconstructing education: Toward a pedagogy of critical humanism*. Westport, CT: Greenwood Press.

Núñez, R., Edwards, L., & Matos, J. (1999). Embodied cognition as grounding for situatedness and context in mathematics education. *Educational Studies in Mathematics*, *39*(3), 45–65.

Parramore, B. (1993). The social studies curriculum and teacher preparation. In V. Wilson, J. Little, & G. L. Wilson (Eds.), *Teaching social studies* (pp. 259–277). Westport, CT: Greenwood Press.

Pennell, J. R., & Firestone, W. A. (1996). Changing classroom practices through teacher networks: Matching program features with teacher characteristics and circumstances. *Teachers College Record*, *98*(1), 46–76.

Popper, K. R. (1979). *Objective knowledge: An evolutionary approach.* Oxford: Clarendon Press.

Ravitch, D. (1989). The revival of history: A response. *Social Studies*, *80*(3), 89–91.

Ravitch, D. (1991). The plight of history in American schools. *New England Journal of History*, *48*(2), 2–11.

Roberts, A., & Locke, S. (2003). Rulebooks of meaning: An evaluative study of Costa Rican social studies environment. *International Journal of Social Education*, *18*(1), 111–127.

Ross, W. (Ed.). (2001). *The social studies curriculum: Purposes, problems, and possibilities* (rev. ed.). Albany, NY: State University of New York Press.

Saxe, D. W. (1992). Framing a theory for social studies foundations. *Review of Educational Research, 62*(3), 259–277.

Shudak, N., & Helfenbein, R. (2005). Contradicting the contrarians: The rhetoric of the neoconservative right in social studies education. *Social Studies, 96*(4), 149–155.

Slater Stern, B. (2006). Debunking the myth: The social studies and rigor. *International Journal of Social Education*, *20*(1), 52–60.

Smith, J. (2001). Modeling the social construction of knowledge in ELT teacher education. *ELT Journal, 55*(3), 221–227.

Tabulawa, R. (1997). Pedagogical classroom practice and the social context: The case of Botswana. *International Journal of Educational Development*, *17*(2), 189–204.

Thornton, S. J. (2005). *Teaching social studies that matters: Curriculum for active learning*. New York: Teachers College Press.

Trofanenko, B. (2005). On defense of the nation. *Social Studies*, *96*(5), 193–198.

Urrieta, L., Jr. (2005). The social studies of domination: Cultural hegemony and ignorant activism. *Social Studies*, *96*(5), 189–192.

Watras, J. (2004). Relativism and indoctrination: The critical reception of the Commission on the Social Studies, 1926–1941. *International Journal of Social Education, 18*(2), 47–61.

Werner, W. (1998). Whatever happened to controversy? *Canadian Social Studies, 32*(4), 117–20.

Whelan, M. (2001). Why the study of history should be the core of social studies education. In W. Ross (Ed.), *The social studies curriculum: Purposes, problems, and possibilities* (pp. 43–56). Albany, NY: State University of New York Press.

White, C. (1997). Indonesian social studies education: A critical analysis. *Social Studies*, *88*(2), 87–91.

Winch, P. (1958). *The idea of a social science and its relation to philosophy*. London: Routledge & Kegan Paul.

Winch, P. (1997). Can we understand ourselves? *Philosophical Investigations*, *20*(3), 193–204.

Wronski, S. (1993). Persistent issues in the social studies. In V. Wilson, J. Little, & G. L. Wilson (Eds.), *Teaching social studies* (pp. 5–23). Westport, CT: Greenwood Press.

Zhao,Y., & Hoge, J. (2006). Countering textbook distortion: War atrocities in Asia, 1937–1945. *Social Education*, *70*(7), 424 –430.

From Traditional School Health to the Emerging Multi-Agency Health and Family Life Education Programme – The Transference of an Identity Crisis Created at the Macro Level

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Abstract. The thesis that informs this report is an examination of the current school-based Health and Family Life Education (HFLE) programme in Grenada. In keeping with education reforms, the Caribbean region has been experiencing a gradual moving away, since the 1970s, from the traditional School Health Education programme to a more comprehensive approach. There have been two sets of significant shifts in Grenada's traditional School Health Education to more comprehensive approaches between 1988 and 1997. This report, which embodies the subsection of the thesis dealing with participants' experiences of the new School Health curriculum, identifies and discusses a form of identity crisis that seems to have been created at the time of the development of the Family Life Education (FLE) curriculum at the macro level, and has subsequently been transferred to the micro level in the shift from traditional School Health Education to the emerging HFLE. The paper looks particularly at how participants associate FLE with the teaching of sex education and how that perception has affected the current School Health Education—essentially a case of guilt by association.

Introduction

The CARICOM Multi-Agency Health and Family Life Education Project (hereafter referred to as the CARICOM HFLE Project), aimed at addressing the growing concern for the health of children and young persons in the Caribbean, had its genesis in (a) the situational analysis of Caribbean young persons and (b) educational reform efforts. The situational analysis indicated several risk factors[1] associated with:

- poor dietary habits;
- problems related to their sexual and reproductive health, such as misconceptions, sexual abuse, and a relatively high rate of teenage pregnancy;
- their low enrolment in school;
- drug abuse;
- male marginalization; and
- problems in relating with their peers, family and significant others. (Alleyne, 1982; Correia & Cunningham, 2003; Ippolito-Shepherd & Castellanos, 2003; Pan American Health Organization [PAHO], 1997; PAHO/World

Health Organization [PAHO/WHO], 1978; World Health Organization [WHO], 1996)

In terms of the educational reform efforts, the following waves of reforms have contributed to the making of the CARICOM HFLE Project: "The Ottawa Charter"; "The Millennium Development Goals" (Ippolito-Shepherd & Castellanos, 2003); "Universal Primary Education" (Bentall, Peart, Carr-Hill, & Cox, 2000; Ippolito-Shepherd & Castellanos, 2003; World Bank, 1971); "Education for All"; and "Basic Learning Needs" (Bental et al., 2000). At the centre of these educational reforms is the concern for human development, as is exemplified in the shift from the first wave of "universal primary education" to the second wave or "basic learning needs," which focuses on quality education. Bellamy (1999) acknowledges that quality dimension by noting that "the Jomtien conference marked a significant shift in the world's collective approach to education, broadening the notion of quality 'basic education.'" (p. 14). Further evidence regarding the emphasis on human development is provided by Bental et al. (2000, pp. 7, 11), who notes that the outcome of the meeting on Education For All

(EFA) in 1990 was "a framework for action to meet basic learning needs … humans to survive, to develop their full potential, to live and work in dignity, to participate fully in development to make informed decisions and to continue learning." The emphasis on quality education to develop the human potential has been described by Vince-Whitman, Aldinger, Levinger, and Birdthistle (2000, p. 8) as "an expanded vision."

The expanded vision for basic education has been a major consideration in strengthening the Caribbean Health Promoting School initiative. For example, concerning the regional meeting of the Pan American Health Organization (PAHO) in 1995, which focused on the question of Health Promoting Schools in the Caribbean, Ippolito-Shepherd and Castellanos (2003) note:

> That initiative is based on a comprehensive view and a multidisciplinary approach that regards people in the context of their daily life, within the community, the family and the society.... It promotes a critical and reflexive analysis of values, behaviors, social conditions and lifestyles, with the goal of strengthening those factors that favor health and human development. (p. 25)

A decade after the EFA conference in Jomtien (1990), Latin America, the Caribbean, and North America met in Santo Domingo at another regional meeting and "agreed to present a regional Framework of Action in which they renewed their commitments to Education for All for the next fifteen years" (UNESCO, 2001, p. 1). Part of that commitment included curricular reform in life skills[2] and School Health Education in an attempt to address basic learning needs and, more specifically, to address the impact of risk factors within the Caribbean context (Ippolito-Shepherd & Castellanos, 2003, p. 29; Vince-Whitman et al., 2000, p. 5). Caribbean Ministers of Health and Education gave the mandate to transform developments within that framework of expanded vision into the strengthening of traditional School Health Education,[3] a process that has led to the CARICOM HFLE Project (Ippolito-Shepherd & Castellanos, 2003, p. 31).

Maison-Bishop and Brandon (1997) noted the progress in the development of the CARICOM HFLE Project:

> In 1994, Caribbean Ministers of Education requested the CARICOM Secretariat and the University of the West Indies to develop a strategy to strengthen Health and Family Life Education in CARICOM member states… two years later the Health and Family Life Education strategy framework was presented to and endorsed by regional Ministers of Education and Health. (p. 4)

The CARICOM HFLE Project is therefore the outcome of a number of declarations with a focus on the issue of human development, which is reflected in its four objectives, namely: teacher training, the development of comprehensive life skills-based curriculum materials, the improvement of inter-agency coordination, and the overall strengthening of the project through the increase in advocacy and funding. It is a planned, comprehensive, interdisciplinary, thematic, life skills-based curriculum aimed at promoting health and wellness through a partnership arrangement. Its health promoting schools' principles are consolidated into several distinct conceptual framework documents replacing the previous Family Life Education[4] (FLE) curriculum, generally perceived as mainly content-based, vertical, and overloaded. As part of creating the shift from FLE, the CARICOM HFLE Project has collapsed its vertical programmes to form core areas of learning by reorganizing and clustering similar health topics within the following thematic areas: Appropriate Eating and Fitness, Human Sexuality, Social/Emotional Issues, and Managing the Environment.

In conclusion, the CARICOM HFLE Project, which is rooted in current reform efforts, addresses three interrelated factors, namely, *health, education*, and the *family.* Health is a critical factor because of the challenges and risk factors that impact on the individual's health and well-being. Education, as another factor, is inextricably linked with health to provide an enabling policy context in a Health Promoting School setting. The Family, as a third element, provides the "home-school linkage" for the Health Promoting School,

and is therefore the strongest protective factor against risk behaviours (Correia & Cunningham, 2003). Given their interrelatedness, all three factors have been unified into the CARICOM Health and Family Life Education Project so as to address the human development dimension.

Purpose

The situational analysis regarding the health of Caribbean children and youth has attracted both regional and national concerns. At the regional level, the concerns have been addressed through the CARICOM HFLE Project, which is a master curriculum design informing curriculum development at the national level. Since the micro programmes within the context of the macro goals have not been specifically researched, Grenada is being used as a case study to increase understanding and dialogue on how a regional project like the CARICOM HFLE Project informs curriculum development at national levels. In addition, the paper aims to show how Grenada has adapted the programme to address its needs, and in so doing the extent to which it has retained the goals and objectives of the macro programme. Against this background, the overarching research question seeks to determine the extent to which the design and implementation of the school-based HFLE curriculum in Grenada has been consistent with the goals and guiding principles of the CARICOM HFLE Project.

Bearing in mind the epistemological question of how do we come to know, the study has been informed by the following assumptions:

- Knowledge is socially constructed and is therefore based on one's experiences
- Knowledge is best obtained by conducting research in the natural setting
- Health and education are inextricably linked and health is achieved through individual and collective efforts.

In terms of limitations, this case study is limited in that it is specific to Grenada and should not be generalized to other HFLE practising countries in the region. There is also the issue of the researcher's bias given the researcher's past involvement with HFLE at the national level. In ensuring the trustworthiness and rigour of the data, this study takes the following four criteria into consideration: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985, p. 300, as cited in Creswell, 1998, p. 197).

Significance of the Study

The significance of this study lies in its contribution to the illumination of the HFLE programme in the sample schools and, by extension, Grenada. The evaluative nature of the study could provide valuable insights given the fact that the researcher was one of the change agents for diffusing the HFLE innovation in Grenada, and as such is now an *outsider* who has been an *insider.* The researcher is therefore bringing invaluable experiences to the study, which together with those of the participants could provide much needed information to inform policy as to whether to continue, terminate, modify, or refocus components of the programme or the programme as a whole. The findings could serve as grounded data in view of the apparent lack of literature on the evaluation of HFLE in the CARICOM region, leading to the possible replication of the evaluation.

The intended audience for the research includes the United Nations' Children Fund (UNICEF), PAHO, The University of the West Indies, the CARICOM Secretariat, the Ministry of Education in Grenada, and the principal of the Grenada Teachers' College, as well as principals, teachers, and students of primary and secondary schools in Grenada.

Method

The sample selection for this qualitative case study is purposive sampling. Three schools (two rural primary and one urban secondary), which comprised the sample for the study, were selected on the basis of their being practising HFLE schools for a period of at least five years, hence the assumption that they are bringing a great deal of knowledge and experience to the programme. A total of nine teachers (three from each of the sample schools) were included in the study. In terms of the teacher selection criteria, a teacher would have had to be teaching HFLE for at least five years.

Purposive sampling was also used for selecting 12 other key informants who are not school-based but have been directly involved in the HFLE programme. They include:

1. Two United Nations project personnel in the area of Health and Family Life Education

2. One HFLE consultant

3. Three Chief Curriculum Officers (including two former officers) at the Ministry of Education in Grenada

4. One HFLE Curriculum Officer in the Ministry of Education in Grenada

5. Three former members of the writing team for the design of Grenada's HFLE curriculum

6. One Health Educator at the Ministry of Health in Grenada

7. One former Chief Medical Health Officer in the Ministry of Health

Analysis of the data took the form of content analysis, which makes use of coding defined by Miles and Huberman (1994, p. 56) as tags or labels for assigning units of meanings to the descriptive or inferential information compiled during a study. Codes are usually attached to "chunks" of varying size words, phrases, sentences, or whole paragraphs. Line-by-line codes have therefore been assigned to the interview transcripts, documents, and field notes taking into consideration both within-case and cross-case analysis.

The Evolution of School Health Education in Grenada

Grenada, which is 344 square kilometers with approximately 90,000 people, is located in the Eastern Caribbean and is the most southerly of the islands. The country's education system is a five-tier system consisting of day care centres, and preprimary, primary, secondary, and tertiary levels. All of the 78 primary schools and 17 of the 20 secondary schools deliver HFLE. Redhead (1970, p. 2) discloses that "before 1970, there was no organized School Health Education program in Grenada" and that Health Education was the responsibility of "health inspectors and health nurses." Two assumptions can be made from Redhead's claim: (a) prior to 1970, the emphasis in education was on decolonization or self-governance, which was reflected in a more economic and content-driven curriculum rather than one that placed emphasis on human development; and (b) School Health Education would have been the responsibility of health inspectors and nurses because, according to Redhead (p. 2), the emphasis was on the "preventative aspect of medicine."

In 1969, administrative structures were being put in place for an organized School Health programme. For example, a PAHO/WHO consultant on Health Education for the Eastern Caribbean held consultations with the Chief Medical Officer. The outcome was "a submission to Cabinet on the development of Health Education service for the state" (Grenada. [Ministry of Health], 1970), which was followed by the appointment of a graduate teacher in 1970 to the post of Health Education Officer (p. 2). During the early 1980s, although School Health in Grenada was still being taught as *Health Education*, at the same time Grenada's Ministry of Education was gradually moving towards the adaptation of the new School Health for the Caribbean, which at that time was FLE. By 1988, the Grenada Curriculum Development Unit developed and piloted the FLE Curriculum, which was subsequently implemented in all primary schools in the country. Several years later, that FLE curriculum was integrated with the Health Education curriculum with which it coexisted on the timetable and labelled HFLE. The HFLE Report (Grenada. Ministry of Education and Labour [MEL], 1996) notes the rationale for the integration:

> Because of the need to integrate …and the tendency in the region to combine Health Education and Family Life Education into one subject area, a policy was taken after due consultation with the relevant authorities in the Ministry of Education to integrate both subject areas into one subject, Health and Family Life Education. (p. 3)

Findings and Discussion

Assertion

Essentially, this section is divided into three parts to show how the revised Grenada School Health Education inherited an identity crisis that was created in the development of FLE at the macro level. The term *identity crisis* in this context means that there are indications that the distinctiveness of School Health Education in the Caribbean, known as FLE, is overshadowed by the sex-related paraphernalia with which it has been associated. The association has led to the perception that this particular School Health Education would be more appropriately labelled "Sex Education" rather than "Family Life Education."

The first part of this section focuses on the creation of the identity crisis at the macro or regional level by examining the processes, people, and products in terms of how they have directly or indirectly contributed to the characterization of FLE in the Caribbean. The second part of this section focuses on Grenada's adoption process of the FLE curriculum in terms of the content that has been delivered in Grenada, the institution responsible for its initial delivery, and its users' perception, to show how the sex-related representation (identity crisis) of FLE at the macro level has been retained in the process of adoption. The third part looks at the transference of the identity crisis from the national FLE curriculum to its revised version, which is the current HFLE. The study shows how the transference of the crisis is associated with the replaced FLE curriculum in terms of its structure, its name, and users' perception.

The Creation of an Identity Crisis at the Macro Level: The People, Processes, and Product

In describing their experiences with the current revised School Health programme known as HFLE, a number of interviewees disclosed what seem to be barriers to the delivery of the curriculum. The data depict one of the barriers as the transference of what this paper refers to as an identity crisis, which in the view of an informant at the macro level was created at that level when the term *Family Life Education* was introduced as

a "façade" to conceal the sex education that it embodied. The former School Health in Grenada, known as FLE, which was informed by that macro curriculum, inherited the sex education label, which has since trickled down to the current HFLE programme.

That informant, in retrospect, elucidates this sex education baggage by showing its association with both the former FLE and the subsequent HFLE:

They (regional FLE planners) *really wanted to teach Sex Education but they called it Family Life Education (FLE) to cover it up...Family Life Education was an impartial truth....people wanted the 'health' part, hence a subsequent Health and Family Life Education (HFLE).*

A former teacher who helped with the planning of the Grenada Family Life Education curriculum, in recalling the process, alluded to the "cover up" issue when she referred to the "people" of Grenada as lacking the necessary preparation in terms of being involved in the change process:

I don't believe people were properly prepared for that change ....people didn't understand ...and they didn't see themselves as part of it.

Implicit in the words of the participant at the macro level who made the disclosure concerning sex education is the fact that sex is generally considered a cultural taboo in the Caribbean, to the extent where parents and, in some instances, the Catholic Church object to the teaching of sex education in schools, as has been the case in Grenada. The cultural perception has been that sex education is about teaching children how to use contraceptives and by extension encouraging them to engage in sexual intercourse, which explains the perception that the name "Family Life Education" was meant to "cover" the sexual innuendo in the curriculum.

Further evidence in support of the claim that sex education was critical in the development of FLE is seen in Alleyne (1982), who identifies sex education as a component of the curriculum. Considering that sex is a taboo subject, even if sex education is a mere component of the programme, it is enough to instil anxiety in the minds of the Grenadian people in general, to the extent where a possible outcome could be the stigmatization of

FLE. In fact, "component," as used by Alleyne (1982), could be considered relative in terms of the actual segment of the curriculum that dealt with the theme "Sex Education." The recommended table of contents for the FLE teacher's manual for junior secondary schools, as noted by Alleyne (1992, pp. 109–113), reveals that the following five themes dealt explicitly with sex-related issues: Adolescence, Human Reproduction, Contraception, Reproduction and Family Formation, and Coping with Stress Situations Within The Family. The devotion of 5 from a total of 13 themes to sex education issues seems to be sufficient evidence to conclude that a significant part of the FLE programme revolved around sex education.

The close association between FLE and the Family Planning Association,[5] noted by Alleyne (1982) and PAHO/WHO (1978), once more seems to strengthen the claim that FLE embodies sex education, especially as family planning is associated with contraceptives and other related issues, all of which have a sexual connotation. Alleyne (1982, p. 22) notes that in the Caribbean, including Grenada, "pamphlets and flyers which were produced as educational aids in Family Planning programmes …were being used as educational material in FLE programmes." In noting "the 'secret' way in which this education was being conducted," (p. 23) Alleyne actually alluded to the taboo regarding discussion on sexuality.

"Family Life and Sex Education," which has been one of the terminologies for School Health in most Caribbean countries, was named after the Regional Committee on Family Life and Sex Education for Latin America and the Caribbean (Alleyne, 1982, p. 1). Not only did the name of that committee, which was created in 1976, impact on the name of School Health, but what is even more significant is the fact that the committee was "devoted to the promotion of Family Life and Sex Education throughout Latin America and the Caribbean (p. 16)." One such promotion, in 1981, took the form of its joint "sponsorship" with the Caribbean Family Planning Affiliation (CFPA) of the first Family Life Education planning workshop in Antigua, "to structure the contents of texts on Family Life Education for the Caribbean region…" (p. 10). With sex education at the centre of the agenda of these two funding agencies, it is very likely that the FLE texts designed under their sponsorship would more or less reflect the philosophy underpinning sex education, thus lending credence to the claim associating the design of FLE with sex education.

Given that needs assessment informs the curriculum, the seemingly overwhelming concern with teenage pregnancy as noted by PAHO/WHO (p. 2) would have been the rationale for including sex education as a component in the FLE curriculum. This paper assumes that the expressions used in developing the rationale that informs an intervention could be used to label the intervention, which could have been the approach taken by the developers at the macro level in ensuring that "sex education" is part of the terminology for the curriculum.

To sum up this subsection, which examined what this study deems the creation of an identity crisis within the context of a School Health curriculum, the data reveal that the crisis was created when the curriculum planners developed a School Health curriculum to address the health and well-being of Caribbean young people and initially labelled it "Family Life and Sex Education." Together, those involved in the development of that curriculum and the manner in which they developed it contributed to the following products that characterize FLE as sex education:

- *The Content* – A concentration of topics dealing explicitly with sex-related issues

- *Curriculum Materials* – The use of reading materials designed by family planning programmes to teach FLE

- *Terminology* – The initial terminology for School Health as "Family Life and Sex Education" — the twinning of Family Life with Sex Education

- *Sponsorship* – The sponsorship of FLE workshops provided by the Regional Committee on Family Life and Sex Education for Latin America and the Caribbean and the Caribbean Family Planning Affiliation (CFPA)—agencies associated with sex education

- *Rationale* – Teenage pregnancy as part of the rationale for FLE – The expressions used in developing the rationale that informs an

intervention could be used to label the intervention

Grenada's Adoption of the Family Life Education Curriculum – The Identity Crisis is Inherited

Some of the interviewees (teachers and administrators) tend to make a very close association between "sex education" and the "Family Life Education curriculum," which indicates that the sex education milieu at the macro level would have been transferred at the micro level in the adoption process. According to information gleaned from the data, it would seem that one aspect of the transference took the form of the content or what was taught as FLE in schools. One of the participants at the micro level, for example, discloses that the teaching of FLE in schools was skewed towards sex education. She notes:

I think a lot of what happened at the school when it came to FLE ...it was primarily sexual reproductive health and Sex Education...and some of the other areas were covered under Social Studies ...

Further evidence of a heavy concentration on sex education in the delivery of FLE is seen in the content of the FLE programme for teachers at what used to be the Grenada National Teachers' College. The document *Family Life* (Grenada National Teachers' College, 1989, pp. 2–3) notes the following content in which seven of the nine themes deal explicitly with sex education:

- Introduction to Family Life Education
- Understand the reproductive systems
- Sexual health care
- Developing personal relationships
- Creating a family
- Problems encountered in family
- Sexually transmitted diseases
- Family planning
- Services offered in Grenada

The FLE course content for the professional development of teachers not attending the Teachers' Training College also shows evidence of a somewhat strong sex education component.

The HFLE Report (MEL, 1996) indicates the following themes as related to sex education out of a total of 19:

- Communication and interpersonal relationship
- Human reproduction
- Human sexuality
- Sexually transmitted diseases
- Family planning

The content for teaching FLE in the upper primary and secondary schools also contains a number of sex-related themes. The curriculum guide (Grenada. Ministry of Education [MOE], 1989, p. viii) notes the content as:

- The individual
- The family
- Physical growth and development
- Interpersonal relationships
- Reproductive biology
- Teenage pregnancy
- Personal and environmental health
- Food and nutrition
- Work
- Drugs
- Grooming the body and care

The initial content source for FLE in Grenada has also contributed to the claim that much of what had been taught in Grenada was based on sex education. Pamphlets and flyers that were produced as educational aids in family planning programmes were being used as educational material in FLE programmes (Alleyne, 1982, p. 22). Since the Family Planning Association focuses on sex education as a significant part of its agenda, it seems reasonable to conclude that emphasis has been placed on sex education.

What appears to be this former Chief Curriculum Officer's description of how the identity crisis was passed down at the micro level could be summed up as people's perception of the nature of FLE shaped by its labelling, which is associated with sex education:

They [the Grenada public] used to call it [FLE] Sex Education at the time ...and people still didn't see the idea of Family Life Education because in their minds is Sex Education ...so they had to try

to beat the sex thing until a program (HFLE) started....

PAHO/WHO (1978, p. 2) also alludes to people's perception of FLE by noting their "interchangeable" use of sex-related terms: "In the minds of many persons, the term Family Life Education, Family Planning, Population Education, Sex Education are used interchangeably and synonymously."

It would seem that part of what could have shaped individuals' perception of Grenada's FLE curriculum has been its close association with the FPA, which was responsible for its initial delivery in the late 1970s. Alleyne (1982, p. 90) notes, for example, that in Grenada "there was an extensive Family Life Education programme from 1977 to 1980, executed by Grenada Planned Parenthood Association and funded by UNFPA. This programme provided Family Life Education services to youths in and out of school."

The concern with teenage pregnancy, as noted in Alleyne (1982) and PAHO/WHO (1978), could have also been a contributing factor in shaping people's perception towards sex education, especially as Alleyne (1982, p. 32) noted that young people were entertaining a lot of misconceptions regarding their sexuality.

To sum up this subsection, the analysis shows that the following four features, which are directly related to the FLE framework at the macro level, have also been associated with FLE in Grenada and, as a consequence, would have contributed to the transference of the identity crisis of FLE from the macro level:

1. The teaching of FLE focused heavily on reproductive health and sex education.

2. The perception of the users of the FE curriculum was that it is sex education.

3. The FPA has been delivering the FLE curriculum in its initial stage.

4. The FLE programme was also referred to as sex education.

What is common about the reports regarding the sex education debate is that FLE at the macro and micro level was very closely associated with sex education. It is significant that the administrator who perceives the former FLE

programme as a complete disguise or "just on paper" has been involved in Caribbean School Health initiatives, including the planning of the said FLE curriculum. That kind of inside information at the macro level seemed to have subsequently filtered down to the micro level. The taboo nature of the word *sex* could be a possible explanation as to why sex education was not directly raised as an issue of concern by teachers and principals in the sample. What is clear, however, is that the former national FLE has been, according to Rogers (1995, p. 224) "compatible with previously introduced ideas" related to sex education.

The Transference of the Identity Crisis from the National Family Life Education Curriculum to Its Revised Version – The Health and Family Life Education

Further analysis of the data shows that just as the introduction of FLE in Grenada was surrounded with controversy, in a similar manner the current HFLE, which is the product of the revised FLE in Grenada, has been conflicting as well. Although the teachers in the sample and informants at the Ministry of Education are not referring directly to the seemingly inherited sex education "baggage" in the conflict revolving around that revised HFLE curriculum, for the reason given earlier in this section, they are however insisting that the FLE and the HFLE curriculum are more or less the same, to the extent where they seem not to perceive HFLE in terms of a curriculum innovation involving a change in philosophy, materials, and subsequently practice. On the contrary, participants' view of the new HFLE model is one of cosmetic change in which much of the old FLE curriculum has been retained. Close scrutiny of both curriculum guides, for example, indicates similarity in their content, the overall structure, and their names, the sound of which conjures up the notion of "family planning." Since the two curriculum guides are perceived to be very similar, the fact is that whatever has been associated with the replaced curriculum will also be associated with the new one, including the sex education issue.

A former Ministry of Education administrator unwittingly alludes to this kind of identity crisis by the manner in which he expresses the evolution of

HFLE. It is as though he is saying that the current HFLE is the same as the replaced FLE:

HFLE was not HFLE...it was just Family Life Education.

In a similar manner, a former Curriculum Officer, in attempting to explain the process of shifting from the old to the new school health curriculum, begins by saying that "*The reason why FLE became HFLE...*" The officer seems to be saying that the old and the new school health curriculum are compatible and that they differ only in their names.

In speaking of the change from FLE to HFLE, this Curriculum Officer alludes to the identity crisis by referring to the "merging" or superficial review of the curriculum rather than the making of an innovative curriculum:

The merging was just for convenience...the teaching was the same HFLE and FLE...only difference is with trained teachers.

This secondary school teacher **(School B),** in distinguishing FLE from HFLE, also contends that the change is in the name only:

There is no difference they just add 'health' in front of FLE" to arrive at the name HFLE.

The Form 1 teacher **(School B)** expressed the degree of conflict and similarity between FLE and HFLE by experiencing what seems to be a Freudian slip (she says Family Life Education when she meant to say Health and Family Life Education):

Some of the Family Life Education (FLE) teachers here...I know they act as counselors for children who have problems.

The Grade 8 teacher (at **School C),** because of the extent to which she perceives the similarity between HFLE and FLE, uses the word "probably" to indicate her uncertainty about what makes them different:

FLE is probably more related to the family and HFLE is about health and the body...probably they merge them and put them together... but I don't see the big difference.

The Infants teacher at **School C** also fails to see "*any big difference*" between the two curricula. In her opinion the two curriculum guides "*cover the same thing...they merge the health with the FLE.*"

Teachers' attitude towards the HFLE curriculum is as though it is still the old curriculum. The term "Family Life Education," for example, was written on one of the timetables instead of "Health and Family Life Education." On a number of occasions, teachers were heard making the Freudians slips "HFLE" for "FLE" and vice versa—almost invariably, teachers as well as administrators used the terms interchangeably. Seemingly, HFLE is used as a buzz word rather than being in participants' thought process.

At **School A**, although the Grade 5 teacher alludes to a significant difference between the two curricula in terms of their content and methodology, she yet concludes by saying that the two curricula are "*sort of similar not different.*" Her perception is just another example of the somewhat double-bound experiences of participants, in that whereas the political rhetoric is that the two curricula are different entities the reality is that they are practically the same. This could be a likely explanation for what seems to be participants' unconscious reactions demonstrated in various ways, such as Freudian slips and other contradictory remarks, as far as their perception of the past and current school health curriculum is concerned.

The Grade 6 teacher **(School A)** reports that there is not too big a difference between the two curriculum guides except "*in the strategies.*" She further adds that because she "*attended the training (she) sees them as different*" thus indicating, as one of the Curriculum Officers also noted earlier, that the difference between the two curricula is not in the documents but in the teacher training dimension.

To sum up, this subsection showed that the HFLE curriculum inherited the following from the FLE curriculum that it replaced: (a) the name Family Life Education has been retained—FLE and HFLE are very similar; and (b) the structure has been retained—HFLE and FLE have similar content and organization. The data show that in the minds of participants—administrators and teachers alike—there is little difference between the emerging School Health (HFLE) and the replaced Family Life Education (FLE): eight

participants view the change from one curriculum to another as superficial and, as is the opinion of two of the participants (a secondary teacher and a HFLE Curriculum Officer), the change is merely in the renaming of the old FLE curriculum. The outcome of the similar features of the two curricula creates the "positioning of the [HFLE] innovation," a phenomenon that Rogers (1995, p. 237) describes as the behaviour of individuals towards an innovation in a similar way in which they did towards "other ideas that are perceived as similar to the new idea," which could probably be another explanation as to why teachers are individually redesigning the HFLE curriculum guides (as I indicated in one of the chapters of the thesis). The redesigning process could be an unconscious act in removing the cultural taboo associated not only with sex and sex education but also the medical or preventative model, which was the initial approach to traditional School Health.

Implications for Educational Policy

The findings related to Grenada's HFLE as having an identity crisis have implications for education policy regarding the diffusion of curriculum change. Diffusion allows for the communication of an innovation. In this context, "communication is the process in which participants create and share information with one another in order to reach a mutual understanding" (Rogers, 1995, pp. 5–6). Clear communication is necessary among change agents and curriculum planners, including key persons at the level of the Ministry of Education and schools, as to the reason for curriculum change. It appears that certain communiqués remain with the change agents and do not filter down, as was seen with the case of FLE being perceived as a cover-up for sex education. This can be avoided by having teachers participate in curriculum workshops and conferences at international and, more so, regional levels so as to be abreast of any developments in the field that will affect their teaching/learning process.

The findings also suggest that the communication of the name of an innovation is just as important as the innovation itself. In the case of Grenada's School Health, not only did the names FLE and HFLE sound very similar but they were perceived as very similar. The name "Family

Life Education" has been linked to sex-related issues as the analysis shows, and the word "Health" in the eyes of the lay person could be associated with issues connected to the medical model, which can be traced to the former Health Science course in the region, which focused on the human body and how it works and a preventive approach to health. It would seem, then, that to the clientele at the micro level the name "Health and Family Life Education" conjures up issues that were traditionally the domain of the medical profession, unlike another set of stakeholders who might probably make the linkage with the human development paradigm. For that reason, it is important that a variety of prospective names for a curriculum be pre-tested by ensuring that they are within the vernacular of both students and teachers, and at the same time will serve as a motivating factor to elicit the required change— what Rogers (1995, p. 237) refers to as "a receiver-oriented, empirical approach to naming an innovation."

Finally, the cultural taboo regarding sexual issues may not only impede the teaching of sensitive issues related to the Human Sexuality component of the programme, but could also impede the programme as a whole given the cultural context. The Human Sexuality theme should therefore be given priority in teacher training at all levels and, at the same time, the goals of the programme must be disseminated at the school community level and beyond to remove doubts related to the sex education baggage.

Conclusion

This paper illuminated the findings on the impact of the evolving process of School Health in Grenada within the context of the development of the FLE curriculum at the macro level. In examining the perceptions of both the former and replaced School Health curriculum, this paper attempted to show how the context within which a curriculum is developed can shape the users' perception of it, particularly the curriculum that replaces it—in the Grenada context it could be a case of guilt by association. In spite of the limitations associated with the study, the results could be useful to curriculum planners, especially in terms of revising and naming a curriculum.

Notes

1. Antecedents that increase the likelihood of negative outcomes, for example, poverty, truancy, parental neglect, etc. (World Bank, 2003, p. 8).

2. Abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life (WHO, 1997).

3. School Health Education – That aspect of a School Health programme which consists "of planned learning experiences based on sound theories that provide individuals, groups, and communities the opportunity to acquire information and the skills needed to make quality health decisions."

4. Family Life Education – A dynamic process in which all persons are involved… it is concerned with preparing persons for life … it is concerned with helping persons to live purposeful and creative lives. As such it is not the province of any one group, or agency or discipline. It requires the concerted and systematic efforts of the home, the school, the church and community agencies (Pan American Health Organization/World Health Organization, 1978, p. 13).

5. Family Planning – A means whereby couples are able, voluntarily, to determine the number and spacing of their children through prevention and postponement of conception.

   The enrichment of life for the individual, for the family, for the community and for the nation (Pan American Health Organization/World Health Organization, 1978).

Reference

Alleyne, M. H. (1982). *Designing family life education publications for schools in the Caribbean. Report of the First CRESALC Workshop in Family Life Education for the Caribbean, Halcyon Reef Hotel, Mamora Bay, Antigua, November 16–20, 1981.* Caracas, Venezuela: CRESALC.

Bellamy, C. (1999). *The Robinson Rojas Archive: The state of the world's children 1999.* Retrieved July 29, 2006, from http//www.rrojasdatabank.info/whole01.htm

Bentall, C., Peart, E., Carr-Hill, R. C., & Cox, A. (2000). *Funding agency contributions to Education for All.* London: Overseas Development Institute.

Correia, M., & Cunningham, W. (2003). *Caribbean youth development. Issues and policy directions* (A World Bank country study). Washington, DC: Author.

Creswell W. J. (1998). *Qualitative enquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: Sage.

Grenada. Ministry of Education. (1989). *Curriculum guide: Family life education curriculum for primary and all-age primary schools in Grenada, 1989: Junior Five & Seniors 1 & 2.* St. George's, Grenada: Author.

Grenada. Ministry of Education and Labour. (1996). *Report on FLE component of UNFPA Assisted Project.* St. George's, Grenada: Author.

Grenada. [Ministry of Health]. *Synopsis of health education in Grenada from 1970.* Unpublished manuscript.

Grenada National Teachers' College. (1989). *Family life: Course description of family life education.* St. George's, Grenada: Author.

Ippolito-Shepherd, J., & Castellanos, L. M. (2003). *Health promoting schools. Strengthening of the regional initiative: Strategies and lines of actions 2003–2012.* Retrieved from http://www.paho.org/English/AD/SDE/HS/HPS_planActionNo4.pdf

Maison-Bishop, C., & Brandon, P. (1997, June). *A multi-agency project.* Unpublished manuscript, Inaugural meeting of Regional Working Group on HFLE.

Pan American Health Organization (PAHO). (1997). *Adolescent health survey report.* Unpublished manuscript, Ministry of Health, Grenada.

Pan American Health Organization/World Health Organization. (1978). *Caribbean Workshop on Family Life Education and Health Education [Report].* Kingston , Jamaica: Author

Redhead, A. C. (1970). *Health education in Grenada.* Unpublished manuscript, Ministry of Health, Grenada.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.

UNESCO. (2001). *Education for All in the Americas: Regional Framework of Action Adopted by the Regional Meeting on Education for All in the Americas, Santo Domingo, Dominican Republic, 10–12 February, 2000.* Retrieved November 28, 2005, from http://www.unesco.org/education/efa/wef_2000/regional_frameworks/frame_americas.shtml

Vince-Whitman C. V., Aldinger C., Levinger, B., Birdthistle, I. (2000). *School health and nutrition* (EFA 2000 Assessment: Thematic studies). Boston, MA: Education Development Center.

World Bank. (1971). *Education: Sector working paper.* Washington, DC: Author.

World Health Organization. (1998). *Caribbean Adolescent Health Survey: Antigua, Dominica, Grenada, Jamaica.* Washington, DC: Pan-American Health Organization.

A Factor Analytic Study of Subject Choice Among a Sixth Form Sample of Jamaican Students, With Particular Reference to the Natural Sciences

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Abstract: This study aims to explore the underlying factor structure among the variables associated with subject choice—sciences or non-sciences—in a selected group of sixth form students in traditional high schools in Jamaica. Participants were 517 sixth form students (females = 308; males = 209) enrolled in the natural sciences (n = 261); humanities/arts and mixed (n = 134); and social sciences/business (n = 122) studies in 10 secondary high schools in Kingston, Jamaica. Participants completed questionnaires comprising mainly closed-ended questions and a number of Likert and bipolar rating scales. Principal components R factor analysis, adopting the VARIMAX orthogonal factor rotation method, was conducted on the total sample as well as subsamples disaggregated by sex, school type, and subject areas. Several variations were revealed by factor analytic methods. For instance, the first two factors for the female participants were *socioeconomic influence* and *verbal orientation*, whereas for the male participants it was *teacher interest* and *socioeconomic influence*. A number of factors were unique only to the girls vis-à-vis boys. Regarding single-sex versus co-educational participants, *motivation/aspiration* and *sociocultural/economic influence* accounted for the largest percentages of the variation in the data of the former; for the co-educational participants, it was *socioeconomic influence* followed by *teacher interest*. With respect to the natural science and non-sciences participants, *socioeconomic influence* and *sociocultural/economic influence* were the first factors for the respective subsamples, and *mathematical orientation*, *verbal orientation,* and *teacher interest* were critical emerging factors whether one took the natural sciences or the non-sciences.

Introduction

This study was mounted to explore the constructs—heuristically specified as social/economic background, school context, motivational and attitudinal variables—that underlie subject choice (sciences or non-sciences) in a selected group of sixth form (Grades 12 and 13) students in traditional high schools in Jamaica. Since the research that informs much of this literature has been conducted on foreign samples, the extent to which these constructs are relevant to the local circumstances (Jamaica and the English-speaking Caribbean) was therefore an important consideration in the present investigation. While science teaching and learning, along with the variables most often employed to judge their outcomes, was the primary focus in exploring subject choice, the researcher was also interested in determining whether similar considerations obtained for other curricular choices.

It is reasonable to argue that the issue of subject choice inevitably leads to the broader question of the type of society that is envisaged for Jamaica, since it speaks to human resources and social capital matters. Bearing the foregoing in mind, the study asked sixth form students to ponder the decisions they previously made, and articulate the factors that influenced such decisions to enrol in their respective A-Level subjects.

Rationalizing Research in Subject Choice

The emphasis on science in the present study is based on the growing recognition of science and technology (ST) as a vital part of everyday life. Bailey and Leo-Rhynie (1997), for instance, drew attention to the importance of ST in national development, and emphasized the need for the establishment and maintenance of a pool of human resources that was well equipped to exploit the latest scientific developments. This immediately brings to the fore the theme of scientific literacy.

As applied especially to the non-science specialist student and general population, scientific literacy refers to the possession of a working

knowledge of science, which equips persons to: (a) engage in an informed way in public discourse on issues pertaining to the influence of science, medicine, and technology (SMT) on society; (b) express how SMT is related to social and/or economic issues (The University of the West Indies [UWI]. Faculty of Pure and Applied Sciences, 2002); (c) apply basic scientific principles, ethos, and methods to the everyday roles/problems they encounter at home, on the job, and at school; and (d) respond in an analytical, rational, and probing way to national and international issues in health, politics, education, and so on. A population comprising generalists with the above attributes will be advantageous to developing countries like Jamaica.

Recognizing this, the "Jamaica Five Year Development Plan, 1990–1995" (Planning Institute of Jamaica [PIOJ], 1993), in articulating the Government of Jamaica's (GOJ) "Plan for Science and Technology," noted the deterioration of the ST sub-sector over a number of years, with the loss of highly qualified professionals being one of the symptoms. The regional university, The University of the West Indies (UWI), was also concerned about a shortage of qualified candidates to its science faculties (PIOJ), a conclusion that may be confirmed by the 1997–2002 UWI Strategic Plan (UWI, 1997). This shortage was particularly worrying against the backdrop of a university-wide initiative, through the UWI/IDB Development Programme, to enhance its capacity as the region's premier institution of higher education, and to establish and maintain a pool of human resources that was ready to take advantage of the most up-to-date scientific developments, recognizing the importance of ST for national and regional development.

The introduction in 1993 of the US$40.3 million Reform of Secondary Education (ROSE) project was the GOJ's response to the generally weak science and mathematics training at the secondary or pre-tertiary level (The reform of secondary education project, 1997). Another reform geared towards introducing students to systematic science at an even earlier age, and therefore emphasizing to them its relevance to their own lives and their country's, was the inauguration of the Grade Six Achievement Test (GSAT) in 1999, to replace the Common Entrance Examination (CEE) (The grade six achievement test, 2000). The CEE did not specifically examine science, unlike its successor, GSAT, which aims at building scientific literacy from an earlier age.

It is evident from the illustrations given above that there is recognition of the need to train the country's and region's human resources in relevant areas, utilizing appropriate methods. Subject choice, particularly as it relates to the sciences, is critical in this respect.

Related Literature

The factors associated with subject choice have not attracted as much interest as achievement, especially in the Caribbean. It is possible to locate literature on student perceptions of school subjects or academic disciplines and, in some cases, the factors that influence their selection (Archer & Freedman, 1989; Archer & Macrae, 1991; Bailey & Leo-Rhynie, 1997; Baker & Leary, 2003; Brickhouse, Lowery, & Schultz, 2000; Catsambis, 1994; Evans, 1999; Kahle & Lakes, 2003; Richardson & Cuffie, 1999; Salmon, 1986; Schleef, 2000; Townsend & Wilton, 2003; Zeidner, 1991). However, compared to achievement and the other above-mentioned areas, there appears to be a dearth of studies which simultaneously assemble the many possible factors that might influence subject choice, hence Richardson and Cuffie's (1999) call for further research. Additionally, the phenomenon of career aspirations has, more often than subject choice, engaged the attention of researchers (Brickhouse, Lowery, & Schultz, 2000; Correll, 2001; Lawrie & Brown, 1992; Lewis & Collins, 2001; Lightbody & Durndell, 1996; Shu & Marini, 1998). Subject choice, although closely connected to career choice, remains a secondary issue.

Social and Economic Background Influences

Baker and Leary's (2003) study in the United States of America (USA) found that girls' attitudes towards science were generally associated with what occurred in school (school factors), the impact of society in general (social factors), and their keen sense of equity (equity factor). Regarding the social aspects, Baker and Leary found, that in general, the girls were getting a vague message from society as to who scientists were and their role. Although parents tended to be

supportive of their career choices, they had neither a negative nor positive influence in this regard, unless the parents were themselves in scientific careers. Girls with family members in science-related careers were most likely to consider such a path. When the girls indicated science choices, these were often biological sciences and often for affective and altruistic reasons like helping people, animals, plants, or the earth. The negative stereotypes they held about science were essentially of the physical sciences.

Kahle and Lakes (2003) urged caution in coming to any definitive conclusion regarding the role of parental involvement. According to them, there were generally three factors that appeared to limit girls' enrolment and achievement in science. Firstly, there was unequal science training, established early in life, both in experiences and skills. Secondly, there was sex-stereotyped careers. Thirdly, there seemed to be a tremendous difference in extra-curricular science activities between boys and girls, and while the social role of parents and teachers in such difference is not yet apparent, the researchers suggested that parental encouragement and expectations were important in their children's choice of extra-curricular activities. Kahle and Lakes' study has brought to the fore the matter that enrolment in science or otherwise has social and cultural foundations in the home and the wider society. Cheng and Starks (2002) had earlier come to a similar conclusion, albeit in their study that compared the effect of educational aspirations of parents, teachers, close relatives, and peers on students' educational expectations across different racial groups. The family factor has also been emphasized by Kysel, West, and Scott (1992) in the UK.

Although Downey's (1995) study on the relationship among family size, parental resources, and children's educational performance was not specifically investigating subject choice, his "parental resource variables," comprising interpersonal (e.g., frequency of talk, knowing friend's parents) and economic (e.g., educational objects at home) resources, are pertinent to the present research. His results confirmed the findings of previous studies that parents' finite levels of resources (time, energy, money, etc.) became diluted among children as sibship size increased. Downey's study also shed light on the

factors that might affect the quality of parental involvement, which Georgiou (1999) and Milgram and Toubiana (1999) specifically addressed in later studies.

School and Teacher Influences

Lawrie and Brown (1992) examined the mediating influence of school type in the UK. One of their concerns was the differences in students' perceptions with regard to gender stereotypes and school subjects as a function of school type attended. They hypothesized that girls and boys in the single-sex schools possessed less stereotyped views compared to those in the mixed schools. Lawrie and Brown found, notably, that there was a difference in the perceptions of boys and girls on the matter; *boys are better at science*. While there was generally consensus about the traditional stereotypes, girls tended to be more complimentary of their own sex than the boys were of them. In general, their evidence therefore suggests that: (a) stereotypical views were still held by both sexes in a variety of areas; (b) girls in co-educational schools appeared to give the most stereotypical responses; and (c) girls and boys in co-educational schools appeared to differ more strongly in their views, specifically maintaining more traditional stereotypical views on school subjects compared to boys and girls in the single-sex schools.

In their pilot study at a co-educational high school in Kingston and St. Andrew, Bailey and Leo-Rhynie (1997) presented evidence that girls, more so than boys, felt that they were not allowed to choose their science subjects freely; the final decision resided with the school. Further, the girls had to rely on themselves, more so than boys, in making their subject choice, possibly evidence of a greater premium attached to the career decisions of boys by parents and teachers. Girls were found to be more doubtful than their male counterparts about their ability to cope with the demands of science study, especially its mathematical aspect. Significantly, many more boys appeared to have a completely free option in selecting their science subjects. For both sexes, parents generally played the primary role in their subject choice. Girls placed a greater weight on their teachers' influence than did boys. Although Bailey and Leo-Rhynie were not specifically investigating the

effect of school type, their findings point to discrimination in the way schools mete out "subject choice" to girls vis-à-vis boys.

In their study utilizing the Theory of Reasoned Action (TRA) to predict and understand Korean high school students' science track choice, Myeong and Crawley (1993) found that science/mathematics teachers, of all the important people in students' lives, provided the least social encouragement for students to pursue further study in science/mathematics. They also found that science/mathematics teachers actively discouraged humanities-track choosers from selecting the science track. This concurs with what Bailey and Leo-Rhynie (1997) later found to be the relatively minor part played by teachers in students' subject choice.

Baker and Leary's (2003) results from their examination of school factors indicate that, with a positive experience, girls also may not be averse to taking science. They liked science, planned to study it further, were confident in their science ability, and many planned to pursue science-related careers. However, all of this rested upon their desire to see science taught differently. To girls, science was important in so far as it met their needs for relationships and association.

In his USA study, Lee (2002) sought to discover the ways in which science, mathematics, and engineering (SME) students' social relationships and experiences affected their involvement in these subjects. Guided by identity theory, which claims that people's behaviour results from mental constructs of how they match the activities of various situations, Lee found that the more students invoked their SME identity in and across situations, the higher their reported self-organization around the SME role. Girls and boys responded differently to new relationships in their programmes; the new relationships were significant for shaping girls' SME identities but had no positive impact on the boys. This indicates the positive and vulnerability effects on girls of "friendlier" vis-à-vis "hostile" (respectively) academic environments; factors that Baker and Leary (2003) have also noted.

Gallagher's (1994) study drew attention to the important variables in students' earlier school experiences that predisposed them to persist in particular subject areas. In broad terms, the researcher set out to discover whether achievement, affect, and sociological factors might explain persistence in science. Results showed that parent education and gender had similar, direct, and moderate although significant impact on science persistence in Grade 11. Intellectual accessibility (how readily students thought they followed the course), teacher academic push (students' opinion that their teachers encouraged achievement), and teacher career push (teacher's expectations concerning specific encouragement of a science career, by students' self-reports), all failed to impact on 11th grade course placement prediction. This finding is interesting, and is also supported by the findings of Bailey and Leo-Rhynie (1997) and Wikeley and Stables (1999). Teacher enthusiasm (the effectiveness of the teachers, from students' points of view), however, remained in the final equation and had a modest effect.

Cavallo and Laubach's (2001) study, like Gallagher (1994) and She and Fisher (2002), was to some extent similarly interested in the classroom learning environment. While no variation was found among males and their decisions to enrol in elective science courses, in terms of the extent to which teachers adhered to the learning cycle (high paradigmatic/high inquiry vs. low paradigmatic/low inquiry) in the classes they attended, there were significant differences for the girls' decisions in this regard. Lee's (2002) finding concerning the positive and vulnerability effects on girls of friendlier vis-à-vis hostile academic settings provides support to Cavallo and Laubach's study. Baker and Leary (2003) have also demonstrated that relationships are important for girls.

Motivational/Attitudinal Influences

Salmon's (1986) thesis entitled *Factors in Achievement and Attrition in Spanish at Grade Nine in Jamaican High Schools* sheds light, from the local perspective and for present purposes, on the important influences on attrition in the study of Spanish. A closer look at some of Salmon's findings is instructive: (a) the majority of students who withdrew from Spanish denied suggestions that their defection was due to the opportunity to do more "useful" subjects, and that Spanish was irrelevant to their career choice; (b) the majority of students (59.3%) viewed their defection from

Spanish as linked to their aspiration to choose subjects in which they were more successful; (c) students tended to prefer subjects that offered better learning possibilities; and (d) lack of motivation was not an important factor in students' decision to quit Spanish. Teachers' views, on the other hand, were quite different.

Richardson and Cuffie (1999) particularly drew attention to the fact that the majority of students choosing the natural sciences had undifferentiated sex-role orientations, and that the more "masculine" boys selected the natural sciences. The link between sex-role orientation and subject orientation is useful, for present purposes: the fact that different subjects appear to be more amenable to one gender or another, with shades in between, may further explain differences in subject choice. It appears from Richardson and Cuffie's study that there are obvious lines of demarcation regarding preferred sex-role orientation, learning styles, and subject orientations.

Evans (1999), seeking to ascertain gender differences in the subjects students took or planned to take in the Caribbean Examinations Council's Caribbean Secondary Education Certificate (CXC-CSEC) examinations, as well as their reasons for taking them, found that there were no statistically significant gender differences in subject choice for Caribbean history, chemistry, general science, and information technology, for instance. However, this was not the case for 80% of the subjects, the following being girls' preferences: agricultural science, biological science, computer science, English language, English literature, principles of accounts, principles of business, German, and French.

There was almost an even tendency for boys and girls to take physics, with a slight advantage to girls. Building engineering and economics were boys' preferences. Evans (1999) also discovered that most subjects were selected by students for their career value. She also observed that gender stereotyping came to the fore in students' consideration of the subjects they would take for CXC-CSEC. It appears that Evans, like Archer and Macrae (1991), although finding some gender stereotyping of subjects, did not establish a conclusive dichotomy between "masculine" and "feminine" subjects corresponding to science and arts, respectively.

Stewart (1998) mounted a study in the West Midlands of England (where selection by ability operated in schools) to investigate the differences in ability and attitude that remained between males and females, even subsequent to their definite decision to study physics at A Level. From her results, Stewart noted that females who opted to take A Level physics were higher achievers than their male counterparts in both mathematics and science/physics; the GCSE results appeared to have a greater effect on girls than boys in their choice of A Level subjects; a larger percentage of girls, compared to boys, who had studied GCSE physics rated it as their favourite subject; a similar percentage of girls and boys pointed to physics and chemistry as their favourite A Levels while girls responded more positively to mathematics than did boys. The choice of biology was the largest relative difference in favour of the girls.

A study mounted by Skaalvik and Rankin (1994) in Norway found that (a) boys had higher mathematical self-concept and self-perceived mathematics skill than girls; (b) there were no significant differences between boys and girls in verbal self-concept or in verbal self-perceived skills; (c) boys had higher mathematics motivation and lower verbal motivation than girls; and (d) in Grade 9, there was no significant difference between boys' mathematical and verbal self-concept; however, girls had significantly higher verbal than mathematical self-concept. Although girls had higher verbal achievement than boys, they did not have a comparable higher verbal self-concept or verbal self-perceived skills.

Conceding that the gender differences as implied by their findings were not surprising, Skaalvik and Rankin (1994) might be right to conclude that, "they [gender differences] are in accordance with perceptions of mathematics as a male domain and verbal activities as a female domain, suggesting that such stereotypes are still alive and strong" (p. 425).

The Present Study

The purpose of the present study was to explore the main constructs underlying the variables associated with subject choice and to derive factor score variables (for subsequent logistic regression and multiple discriminant analyses). Although not reported here, *t* tests for independent (unrelated)

samples were conducted to ascertain whether there were significant differences between the participants grouped by sex, school type, and subjects selected. Simple or one-way analysis of variance (ANOVA) was used to determine whether there were significant differences between the means of the three subject groups (see Table 1) on the relevant variables. The Tukey's HSD (Honestly Significant Difference) test indicated which of the means were significantly different from which of the others. The relevant research question posed was:

Are there identifiable dimensions or constructs that underlie the variable areas, originally categorized as social/economic background, schooling, and motivational/attitudinal, associated with subject choice?

Method

Participants

Participants were upper and lower sixth formers during the 2003–2004 academic year. A total of 549 questionnaires were administered but 32 had to be discarded because they had incomplete data. The 517 completed questionnaires represented a response rate of about 94%. Table 1 illustrates the sample composition, representing approximately 18% of the population. The ratio of participants

from single-sex boys', single-sex girls', and co-educational schools roughly reflected that of the population.

Table 1. Sample Composition, Grades 12 and 13, During Academic Year 2003–04

School Type	Males	Females	Total
Single-Sex Boys'	127	--	127
Single-Sex Girls'	--	203	203
Co-educational	82	105	187
Total	209	308	517

In addition to the subsamples of sex and school type, for factor analysis (FA) purposes, the sample was also disaggregated on the basis of subject areas: natural sciences ($n = 261$); social sciences/business ($n = 122$); and humanities and arts/mixed ($n = 134$).

Measures

Table 2 displays the variables selected, along with their sources and codes.

Table 2. Variables Selected for Factor Analysis with Codes and Sources

Variable/Dimension Name	Code	Measurement Source/Instrument
BACKGROUND (SOCIAL & ECONOMIC) INFLUENCES (FAMILY STRUCTURE, INTERPERSONAL RELATIONS, & ECONOMIC RESOURCES)		
Cultural & Social Capital	CULSOCAP	Broh (2002); De Graaf, De Graaf & Kraaykamp (2000); Downey (1995); Dumais (2002); Hamilton (1976); Leo-Rhynie (1978)
Family Stability	FAMSTAB	Downey (1995)
Family Size/Birth Order	FAMSIZE	Downey (1995)
Parental Involvement in and Communication with School	PARCOMM	Georgiou (1999)

Variable/Dimension Name	Code	Measurement Source/Instrument
Parental Involvement in Students' Schoolwork	ParInvol	Tel-Aviv Parental Involvement Scale – Adapted from Milgram & Toubiana (1999)
Parents'/Guardians' Educational and Occupation Levels	SES	Miller (1990); Various researchers including Gallagher (1994)
Educational Objects at Home	EducObj	Downey (1995); Hamilton (1976); Leo-Rhynie (1978)
School/Teacher Influences		
Pre-Secondary Education	PreSec	Hamilton (1976); Leo-Rhynie (1978)
School Resources	SchRes	Hamilton (1976); Leo-Rhynie (1978)
Hidden Curriculum	HidCurr	Various sources in Sociology of Education and Curriculum Studies, e.g., Ballantine (2001); McCutcheon (1997); Summerfield & Youngman (1999a and 1999b)
Total School Extra-Curricular Participation	ExCurr	Broh (2002)
Teacher Inquiry-based Skills	Inquire	Gallagher (1994)
Combined TPush, CPush & TEnthu	Interest	
• Teacher Academic Push	• TPush	Gallagher (1994)
• Teacher Career Push	• CPush	Gallagher (1994)
• Teacher Enthusiasm	• TEnthu	Gallagher (1994)
Motivational/Attitudinal Influences		
CXC-CSEC/GSCE Performance	Exam	CXC-CSEC/GSCE Results
Career/Vocational Aspirations	Habitus	Dumais (2002); Hamilton (1976); Leo-Rhynie (1978)
Reasons for Entering Sixth Form	ReasEnt	Leo-Rhynie (1978)
Factors Influencing Students to Select Subjects	FacInflu	Present Researcher; Cavallo & Laubach (2001)
Subject Attitudes	SubjAtt	Present Researcher; Cavallo & Laubach (2001); Jegede & Okebukola (1992); Ledbetter (1993); Moore & Foy (1997)

Variable/Dimension Name	Code	Measurement Source/Instrument
Locus of Control	**MALOCS**	Multidimensional Academic Locus of Control – Millar & Irving (1995)
Creative Personality	**CREATIVE**	Hamilton (1976); (Hamilton, 1980, in Richardson, 1982); Leo-Rhynie (1978); Richardson (1982) Richardson & Crichlow (1995); Summerfield & Youngman (1999b)
Mathematics Intention	**MATHINT**	Skaalvik & Rankin (1994)
Mathematics Intrinsic Motivation	**MATHMOT**	Skaalvik & Rankin (1994)
Mathematical Self-Concept	**MATHSELF**	Skaalvik& Rankin (1994)
Verbal Intention	**VERBINT**	Skaalvik & Rankin (1994)
Verbal Intrinsic Motivation	**VERBMOT**	Skaalvik & Rankin (1994)
Verbal (Reading/Writing) Self-Concept	**WRITSELF**	Adapted from Skaalvik & Rankin (1994)
Academic Procrastination	**ACADPROC**	Abridged Academic Procrastination Scale - Milgram & Toubiana (1999)
Motivation to Achieve Academically	**M-ACH**	Abridged Motivation to Achieve Academically Scale – Waugh (2002a, 2002b)

The variables—garnered from the review of the related literature—were grouped, for heuristic purposes, into *background (social and economic)*, *school/teacher,* and *motivational/attitudinal* influences. The variables, PARCOMM (α = .85); PARINVOL (α = .89); INQUIRE (α = .83); INTEREST (α = .89); REASENT (α = .76); FACINFLU (α = .58); SUBJATT (α = .72); MALOCS (α = .82); CREATIVE (α = .88); MATHINT (α = .94); MATHMOT (α = .89); MATHSELF (α = .86); VERBINT (α = .91); VERBMOT (α = .90); WRITSELF (α = .85); ACADPROC (α = .76); HIDCURR (α = .87); and M-ACH (α = .92), were based on Likert scales and bipolar rating scales (See Appendix) whereas the rest were composite measures from participants' responses to several appropriate aspects of the variables measured.

Results and Discussion

Factor Analyses

Table 3 summarizes the major factors that emerged from principal components FA on the total sample and the eight subsamples.

Table 3. Summary of Major Factors Identified From Principal Components Analysis With VARIMAX Rotation

Sample	Factors	Variables Loading Significantly	Approx. % of Variance Explained
Total Sample *N* = 517	1. SOCIOECONOMIC INFLUENCE	CulSoCap; FamSize; SES; EducObj; PreSec; Exam.	9.90
	2. VERBAL ORIENTATION	VerbInt; VerbMot; WritSelf.	8.73
	3. MOTIVATION/ASPIRATION	Habitus; ReasEnt; FacInflu; AcadProc; M-Ach.	8.46
	4. MATHEMATICAL ORIENTATION	MathInt; MathMot; MathSelf.	8.40
	5. TEACHER INTEREST	Inquire; Interest; SubjAtt; (ReasEnt)	7.40
	6. PARENTAL INTEREST/INVOLVEMENT	FamStab; ParComm; ParInvol; (CulSoCap)	6.40
	7. HIDDEN CURRICULUM	HidCurr; MALOCS (-)	4.76
Female Subsample *n* = 308	1. SOCIOECONOMIC INFLUENCE	CulSoCap; FamSize; SES; EducObj; PreSec; Exam.	10.08
	2. VERBAL ORIENTATION	VerbInt; VerbMot; WritSelf.	9.09
	3. MOTIVATION/ASPIRATION	Habitus; FacInflu; AcadProc; M-Ach; (SubjAtt; ReasEnt).	8.68
	4. MATHEMATICAL ORIENTATION	MathInt; MathMot; MathSelf.	8.55
	5. TEACHER INTEREST	Inquire; Interest; ReasEnt; SubjAtt.	7.02
	6. PARENTAL INTEREST/INVOLVEMENT	ParComm; ParInvol; (CulSoCap)	6.40
	7. HIDDEN CURRICULUM	HidCurr; MALOCS (-)	5.29
Male Subsample *n* = 209	1. TEACHER INTEREST	Inquire; Interest; ReasEnt; SubjAtt; M-Ach.	9.82
	2. SOCIOECONOMIC INFLUENCE	CulSoCap; ParInvol; SES; EducObj; (ParComm).	9.13
	3. MATHEMATICAL ORIENTATION	MathInt; MathMot; MathSelf.	8.61

Sample	Factors		Variables Significantly Loading	Approx. % of Variance Explained
	4.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	8.53
	5.	ACADEMIC DILIGENCE/PARENTAL INVOLVEMENT	PARCOMM; ACADPROC; (PARINVOL, M-ACH)	6.08
	6.	EXAMINATION	PRESEC; EXAM.	6.00
Single-Sex Subsample *n* = 330	1.	MOTIVATION/ASPIRATION	PARINVOL; HABITUS; REASENT; FACINFLU; ACADPROC; M-ACH; (PARCOMM).	9.84
	2.	SOCIOCULTURAL/ECONOMIC INFLUENCE	CULSOCAP; FAMSTAB; PARCOMM; SES; EDUCOBJ; PRESEC; (PARINVOL).	9.84
	3.	MATHEMATICAL ORIENTATION	MATHINT; MATHMOT; MATHSELF.	8.79
	4.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	8.76
	5.	TEACHER INTEREST	INQUIRE; INTEREST; SUBJATT.	6.68
	6.	U N D E F I N E D	--	--
	7.	HIDDEN CURRICULUM	HIDCURR (-); EXAM; MALOCS.	5.34
Co-educational Subsample *n* = 187	1.	SOCIOECONOMIC INFLUENCE	CULSOCAP; FAMSIZE; SES; EDUCOBJ; PRESEC; EXAM; (SUBJATT [-]).	11.58
	2.	TEACHER INTEREST	INQUIRE; INTEREST; REASENT; SUBJATT; M-ACH.	9.30
	3.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	9.12
	4.	MATHEMATICAL ORIENTATION	MATHINT; MATHMOT; MATHSELF.	8.35
	5.	PARENTAL INTEREST/INVOLVEMENT	PARCOMM; PARINVOL; (CULSOCAP).	6.63
	6.	HIDDEN CURRICULUM	HIDCURR (-); FACINFLU; MALOCS.	5.59

Sample	Factors		Variables Loading Significantly	Approx. % of Variance Explained
Natural Science Subsample *n* = 261	1.	SOCIOECONOMIC INFLUENCE	CULSOCAP; SES; EDUCOBJ; PRESEC; EXAM.	10.56
	2.	TEACHER INTEREST	INQUIRE; INTEREST; SUBJATT; M-ACH.	8.62
	3.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	8.37
	4.	MATHEMATICAL ORIENTATION	MATHINT; MATHMOT; MATHSELF.	7.56
	5.	SUBJECT-RELATED LOCUS OF CONTROL	HIDCURR (-); HABITUS; REASENT; FACINFLU; MALOCS.	7.41
	6.	PARENTAL INTEREST/INVOLVEMENT	PARCOMM; PARINVOL; ACADPROC.	7.13
Non-Sciences Subsample *n* = 256	1.	SOCIOCULTURAL/ECONOMIC INFLUENCE	CULSOCAP; SES; EDUCOBJ; PRESEC.	10.38
	2.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	9.29
	3.	MATHEMATICAL ORIENTATION	MATHINT; MATHMOT; MATHSELF.	8.77
	4.	HIDDEN CURRICULUM-MOTIVATION LINK	HIDCURR; REASENT; SUBJATT; M-ACH.	7.10
	5.	ACADEMIC DILIGENCE/PARENTAL INVOLVEMENT	PARCOMM; PARINVOL; ACADPROC.	6.80
	6.	TEACHER INTEREST	INQUIRE; INTEREST.	6.53
	7.	EXAMINATION LOCUS OF CONTROL	EXCURR; EXAM; FACINFLU; MALOCS.	6.17
Social Sciences & Business Subsample *n* = 122	1.	SOCIOCULTURAL/ECONOMIC INFLUENCE	CULSOCAP; PARCOMM; PARINVOL; SES; EDUCOBJ; PRESEC.	10.78
	2.	HIDDEN CURRICULUM-MOTIVATION LINK	HIDCURR; REASENT; SUBJATT; ACADPROC; M-ACH.	9.45
	3.	MATHEMATICAL ORIENTATION	MATHINT; MATHMOT; MATHSELF.	9.20
	4.	VERBAL ORIENTATION	VERBINT; VERBMOT; WRITSELF.	8.64

Sample	Factors		Variables Significantly Loading	Approx. % of Variance Explained
	5.	LOCUS OF CONTROL	ExCurr; Exam; FacInflu; MALOCS; (HidCurr [-]).	8.17
	6.	TEACHER INTEREST	Inquire; Interest.	5.60
Humanities & Arts/Mixed Subsample	1.	VERBAL ORIENTATION	FacInflu; VerbInt; VerbMot; WritSelf; (MALOCS).	10.84
n = 134	2.	SOCIOCULTURAL/ECONOMIC INFLUENCE	CulSoCap; ParComm; ParInvol; SES; EducObj; PreSec.	10.05
	3.	MATHEMATICAL ORIENTATION	Habitus; MathInt; MathMot; MathSelf.	9.23
	4.	TEACHER INTEREST	Inquire; Interest; ReasEnt; MALOCS.	9.01
	5.	HIDDEN CURRICULUM-MOTIVATION LINK	HidCurr; SubjAtt; M-Ach (ReasEnt).	6.73
	6.	EXAMINATION	PreSec; Exam.	5.62

Note. Variables in parentheses loaded more strongly on other factor.
Loadings of .40 were taken as the minimum for significance.

Table 3 provides a suitable focus for comparison between the overall sample—the benchmark—and the various subsamples on the basis of the sequence, and therefore the importance of the factors that have emerged. Also displayed is the approximate percentage of the variation explained by each factor.

Socioeconomic Influence and Sociocultural/ Economic Influence Factors

SOCIOECONOMIC INFLUENCE emerges as Factor 1 for the total sample as well as the female, co-educational, and natural science subsamples. A comparable factor, SOCIOCULTURAL/ ECONOMIC INFLUENCE, with the emphasis on the social and cultural capital aspect (rather than SES), emerges as Factor 1 for the overall non-sciences subsample, but also separately for the social sciences/business subsample.

Where neither of these factors emerges as Factor 1, the SOCIOCULTURAL/ECONOMIC INFLUENCE FACTOR emerges as Factor 2 for the single-sex and humanities and arts/mixed subsamples while the SOCIOECONOMIC INFLUENCE FACTOR emerges as Factor 2 for the male subsample. It means, therefore, that these factors (and the variables that loaded significantly on them) emerge either as the first or second factors in all the samples. The foregoing suggests the importance of socio-economic and sociocultural variables in subject choice.

Subject selection by female, co-educational, and natural science participants apparently hinges on their socio-economic backgrounds and sociocultural experiences. Hence, socioeconomic/ sociocultural factors seem to supersede the apparent "negative" environment for girls often associated with co-educational schools (Lawrie & Brown, 1992). The cultural capital that girls of higher SES gain at home manages to cushion them against whatever negative stereotypes exist in the co-educational settings that researchers like Bailey and Leo-Rhynie (1997), Brutsaert and Van Houtte (2002), Haussler and Hoffmann (2002), Kahle and Lakes (2003), and Leo-Rhynie (2002) have pointed out. Regarding the overall non-science subsample and the social sciences/business

participants (separately), SOCIOCULTURAL/ ECONOMIC INFLUENCE also seems to define these groups' subject choice, having emerged as the first factor for these subsamples. Wikeley and Stables (1999) suggested that the higher the participants' SES, the more informed they will be regarding the relevant prerequisites (subject selection) for their intended careers. Dumais' (2002) concepts of cultural capital and habitus—both associated with SES—also confirm this finding. Other researchers like De Graaf, De Graaf, and Kraaykamp (2000), Gallagher (1994), and Wong (1998) are not at odds with this finding of a strong SES influence.

Verbal Orientation Factor

The VERBAL ORIENTATION FACTOR emerges as Factor 1 for the humanities and arts/mixed participants. However, it emerges as Factor 2 for participants of the total sample as well as the female and overall non-sciences subsamples. For the co-educational and natural science participants, VERBAL ORIENTATION emerges as Factor 3 and as Factor 4 in the case of male, single-sex, and social sciences/business subsamples.

Noteworthy is the apparent resemblance, on the basis of VERBAL ORIENTATION, of the following subsamples: (a) female and overall non-science (Factor 2); (b) co-educational vis-à-vis natural science (Factor 3); and (c) male vis-à-vis single-sex vis-à-vis social sciences/business (Factor 4). Since girls' verbal ability is superior, as often manifested in their greater participation and achievement in the non-sciences (Correll, 2001; Leo-Rhynie, 2002; Skaalvik & Rankin, 1994), the female/non-science link is predictable. Regarding the co-educational vis-à-vis natural science participants, this appears to lend support to what seems to be a more amenable academic environment for boys in co-educational schools (Bailey & Leo-Rhynie, 1997; Lawrie & Brown, 1992; Leo-Rhynie, 2002; Richardson & Cuffie, 1999), assuming the greater participation of boys in the natural sciences. Hence, there is some intersection of sorts between co-educational schools and natural science and, by extension, boys' participation.

One observes that in the single-sex environment, where supposedly the boys "let down their guard," VERBAL ORIENTATION holds the same importance for them as it does for social science/business participants and single-sex participants in general. That said, it is important to note this relationship and explore it in future research.

Not unexpectedly, the VERBAL ORIENTATION FACTOR emerges first for the humanities and arts/mixed participants—the only occasion on which it emerges as Factor 1. This finding, as discussed elsewhere, accords with the related literature (Evans, 1999; Lawrie & Brown, 1992; Salmon, 1986). It is also not surprising that VERBAL ORIENTATION appears as low as Factor 4 for male participants; a discovery that further substantiates those by Leo-Rhynie (2002) and others of the male indifference towards verbal-oriented subjects.

Motivation/Aspiration Factor

The MOTIVATION/ASPIRATION FACTOR emerges as the most important one for the single-sex subsample. Indeed, aside from emerging as Factor 3 for the total sample and the female subsample, it does not appear in any other subsample. A possible explanation is that the mechanism operating in the single-sex environment is one where, in the absence of the direct female/male competition/dichotomy, participants tend to depend on their individual intrinsic motivations and aspirations, as well as some impetus from their parents, regarding subject choice, hence the variables that constitute the MOTIVATION/ASPIRATION FACTOR—PARINVOL, HABITUS, REASENT, FACINFLU, ACADPROC, AND M-ACH. It is also possible that in the single-sex setting, teachers and students do not adopt sexist behaviours because such actions might be unnecessary in that environment. Evidently, there is no feeling of vulnerability among single-sex students, which might well accord with Richardson and Cuffie's (1999) finding that "boys from boys' schools are significantly more masculine than other students while girls from girls' schools are significantly more feminine than other students" (p. 184).

Mathematical Orientation Factor

This factor emerges as Factor 4 for the total sample. The MATHEMATICAL ORIENTATION FACTOR also emerges as the fourth factor for co-

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educational and natural science participants. On the other hand, it emerges as Factor 3 in the majority of subsamples, that is, the male, single-sex, overall non-sciences, social sciences/business and humanities, and arts/mixed subsamples.

Here, as is the case with the discussion of the VERBAL ORIENTATION FACTOR, the co-educational and natural science link arises, with VERBAL ORIENTATION and MATHEMATICAL ORIENTATION emerging in this sequence for both subsamples. Indeed, the first four factors—SOCIOECONOMIC INFLUENCE, TEACHER INTEREST, VERBAL ORIENTATION, and MATHEMATICAL ORIENTATION—follow the same order for the natural science and co-educational subsamples.

The fact that the MATHEMATICAL ORIENTATION FACTOR emerges as Factor 3 for the male, single-sex, and non-sciences subsamples speaks to their importance—whether positively or negatively related—to subject choice. It is also possible to argue that this "resemblance" between the male, single-sex, and non-sciences participants might be indicative of the inappropriateness of boys' attempt to prove the "rigid male macho" characteristic in the single-sex environment where there are no girls present to overawe. The tendency to intimidate the girls in a co-educational setting was observed by Bailey (2000) in looking at sexual politics of classroom interactions.

Lending further weight to this line of reasoning, it is noteworthy that it was in the co-educational setting that Lawrie and Brown (1992) found the greatest response differences between girls and boys with regard to perceptions of mathematics. The foregoing observations are made, notwithstanding Parry's (2000) finding that "displays of hard male macho behaviour were equally apparent in the single sex and coeducational schools" (p. 37).

Surprisingly, the MATHEMATICAL ORIENTATION FACTOR emerges as fourth for natural science participants. Evidently, at least if one follows the FA results, negative or pessimistic verbal orientation is more important than optimistic mathematical orientation in explaining participants' natural science selection. This suggestion, however, is tentatively made in the absence of logistic regression and multiple discriminant analyses. It must also be explored in future research.

Teacher Interest Factor

The TEACHER INTEREST FACTOR emerges as Factor 1 for the male participants. It is Factor 2 for the co-educational and natural science subsamples. It however emerges as Factor 5 for the total sample, the female, and the single-sex subsamples. This factor enters as Factor 6 for the non-sciences participants as a whole as well as separately for the social sciences/business subsample, but fourth in the case of the humanities and arts/mixed subsample.

Noteworthy, is the persistence of the TEACHER INTEREST FACTOR for the male, co-educational, and natural science participants (previously observed for SOCIOECONOMIC INFLUENCE, VERBAL ORIENTATION, and MATHEMATICAL ORIENTATION FACTORS) thus reinforcing an apparent link between these subsamples. This link is well-documented by Bailey (2000) and reiterated by Leo-Rhynie (2002).

Reference is made to Bailey and Leo-Rhynie's (1997) study, which found that the girls had to rely on themselves, more than boys, in making subject choice. Indeed, the findings here seem to coincide with what Hamilton (1976) pointed out more than three decades ago; that males responded to certain social aspects in their environment, such as teacher influence.

Occurrences such as boys being more likely than girls to receive negative evaluations from teachers; the alienation of boys by the curriculum and teaching methods; and the greater tendency by teachers to insult boys (Evans, 1999, as cited in Leo-Rhynie, 2002; Evans, 2001) must be noted in reading this study's results. Fortunately, however, FA results here appear to be pointing to favourable teaching environments for boys in the co-educational schools.

Parental Interest/Involvement Factor

The PARENTAL INTEREST/INVOLVEMENT FACTOR emerges as Factor 5 for the co-educational subsample. In the case of the male and non-sciences subsamples, it also emerged as Factor 5, albeit with the academic diligence variable assuming the most significance. In light of this, the parental involvement aspect is common to the co-educational, male, and non-sciences subsamples in its ordering.

For participants of the total sample, and the female and the natural science subsamples, the PARENTAL INTEREST/INVOLVEMENT FACTOR emerges as Factor 6. This factor, whether in this form or with the academic diligence aspect emphasized, does not emerge for the single-sex, social sciences/business, and humanities and arts/mixed participants.

What needs to be noted is that the cluster of variables that constitute the PARENTAL INTEREST/INVOLVEMENT FACTOR is not very important, or as important (vis-à-vis the earlier factors), in any of the subsamples or indeed the total sample, given that it appears either fifth or sixth. It fails to appear at all for the single-sex, social sciences/business, and humanities and arts/mixed subsamples. These findings both support and challenge the literature. Myeong and Crawley (1993) found that science-track students perceive more social support for their choice from several sources, including parents, than do the humanities-track. Parents and siblings are deemed to exercise the most influence on science-track choice, whereas homeroom teachers and friends seem to exercise the least. Baker and Leary (2003) claim that "girls with the strongest commitment to scientific careers learned to love science through the love of a parent or grandparent involved in science" (p. S198). Note that the PARENTAL INTEREST/INVOLVEMENT FACTOR does not emerge for the humanities and arts/mixed subsample in the present study.

Hidden Curriculum and Hidden Curriculum-Motivation Link Factors

A HIDDEN CURRICULUM-MOTIVATION LINK FACTOR emerges as Factor 2 for the social sciences/business participants, but as Factor 4 for the overall non-sciences subsample and Factor 5 for the humanities and arts/mixed subsample. The HIDDEN CURRICULUM FACTOR emerges as Factor 6 for the co-educational subsample. In the case of the total sample, female and single-sex subsamples, the HIDDEN CURRICULUM FACTOR emerges as Factor 7.

Besides the social sciences/business participants, this factor does not appear to be very important for other subsamples or the total sample. It does not feature for the natural science or male subsamples; notably, it is more important in the

co-educational setting than it is in the single-sex setting, perhaps predictably so. It may be that natural science participants tend to attach more importance to objective facts and, because of this, would not be "hindered" by the hidden curriculum as the non-science participants would.

Hence the apparently higher value placed on natural science subjects in schools, and the traditional gender socialization that associates science with male and non-science with female (Bailey, 2000; Leo-Rhynie, 2002), help to explain the degree of importance of the hidden curriculum, for the relevant subsamples, as a consideration in subject choice. The finding by Whiteley (1997), Bailey (2000), and others of bias in favour of males in science textbooks adds further credence to this line of reasoning. The importance of the hidden curriculum may also be gleaned from carefully reading the evidence which Bailey and Leo-Rhynie (1997) presented that girls, more so than boys, feel they are not allowed to choose their science subjects freely, with the final decision resting with the school.

Evidently, according to the international literature, girls are afforded less science experiences than boys, including the use of scientific apparatus (Kahle & Lakes, 2003). Baker and Leary (2003) asserted that with a positive experience (e.g., meeting their needs for relationships) girls may not be indisposed to taking science (cf. Lee, 2002). Myeong and Crawley (1993) have reported that science-track students perceive more social support for their choice from various referent groups—including homeroom teachers, science/mathematics teachers, friends, and senior class members—than do the humanities-track.

Examination Factor

An EXAMINATION FACTOR emerges as Factor 6 for the male and humanities and arts/mixed subsamples. This factor does not emerge elsewhere, suggesting that achievement in examinations and the pre-secondary school experience (constituting the EXAMINATION FACTOR) hold some importance for male participants as well as humanities and arts/mixed participants. This result regarding the male subsample is not supported by Stewart's (1998) finding that the GCSE results appear to have more

bearing on girls than boys in their choice of A Level subjects. The finding is also at odds with Correll (2001), who observed that mathematics grades have a "significantly larger positive effect on the mathematical self-assessments for females than for males" (p. 1724). In the present study, however, the EXAMINATION FACTOR does not emerge for female participants. Had this not been the case, it would be less challenging to explain the emergence of an EXAMINATION FACTOR for humanities and arts/mixed participants. One possibility might have been to suggest that the preponderance of girls in the humanities and arts/mixed track explains the emergence of the EXAMINATION FACTOR for that subsample. This explanation, however, cannot be invoked. One would have to surmise alternatively that the emergence of this factor for the humanities and arts/mixed participants may well be indicative of the prominence of the negative effect of a lower achievement in examinations, and a less than ideal pre-secondary experience. Results from t tests (not reported here) show that the natural science participants scored significantly higher on PRESEC and EXAM than their non-science counterparts, and post hoc Tukey's HSD indicates, similarly, that the natural science participants' mean values are significantly different from those of the social science/business and humanities and arts/mixed participants on the variables PRESEC and EXAM.

Conclusion and Implications

It is important to note that the purpose of FA is not to predict but rather to identify structure and summarize data (Hair, Anderson, Tatham, & Black, 1998). This study, therefore, should serve as a useful basis for later examining the factors that "predict" subject choice. With the evidence presented by exploratory FA, the writer is limited to making provisional statements which speak to the factors that appear to be associated with subject choice. In the absence of dependence multivariate analyses, it is nonetheless possible to offer the following implications:

1. There is evidence that students' social and cultural capital are fundamental in what subjects they take or are allocated at school. Often, it has been noted that the brighter students do natural science, whether by choice

or tracking (see Bailey, 2000; Hamilton 1976). In reality, there is no universal innate "programmer" in students that leads them along natural science or non-science trajectories. Rather, it is social and cultural factors that mediate, especially factors that are inextricably bound to the economic wherewithal at home and the consequences of it—educational and learning objects at home; friendships (social nexus) that add cultural value; experiences (highbrow as opposed to lowbrow culture, travelling, etc.); and access to additional tutorials and books.

2. The following are important in determining students' persistence in natural science: (a) the enthusiasm of teachers, (b) the extent to which they are able to transfer some of this enthusiasm to their students, (c) the extent to which they encourage students to pursue scientific careers, (d) the extent to which they encourage their students academically, (e) the degree to which they incorporate laboratory sessions in their teaching, and (f) their use of problem-solving/inquiry-based skills. The students who had experienced the foregoing were the ones most likely to be enrolled in natural science courses.

3. The dynamics between mathematical and verbal orientations are compelling factors in students' subject choice. Dependence multivariate analyses will shed light on the stronger "push" or "pull" factors concerning these orientations. Tentatively, one might argue that students would more likely shy away from natural science by a perception of a lack of skill in mathematics rather than a feeling of confidence in their verbal ability. By extension, students who have a strong sense of mathematical efficacy, even though they also feel reasonably competent in the verbal sphere, are more likely to embark on a path toward natural science than toward the non-sciences.

4. The phenomenon of the hidden curriculum is very prevalent in secondary high schools and very much a feature in determining the subjects students choose. They get hints and clues as to where various subjects are in the

hierarchy and which students are the favoured ones. The foregoing curiously appears to be based on the subjects they do; the direction of the "causal mechanism" needing further investigation. Although the hidden curriculum is not blatant, it seems that the students who perceive its presence are the very ones who are discouraged from taking natural science since, evidently, they experience it (the hidden curriculum) in a negative way. In that regard, girls are more likely to experience it negatively compared to boys (it does not emerge as a factor in the male subsample).

5. Examinations are very important for boys' persistence in science. This means that they are particularly negatively affected by poor grades and, therefore, their aspirations and hopes in science are more vulnerable to poor grades. Examination does not emerge in the FA for girls.

Recommendations

A number of recommendations are indicated by the author's interpretation of the present data. The following should therefore facilitate optimal subject choice:

1. If Jamaica's aim is to develop a scientifically literate population and/or encourage students who otherwise would have done the non-sciences to do natural science, the authorities should make available to members of the lower socio-economic stratum and, *ipso facto*, those students who do the non-sciences (because they feel unable to do otherwise) the enabling factors—for example, conducive classroom environments, teacher academic push, teacher career push, teacher encouragement, appropriate teacher instructional methods, appropriate educational objects—that increase their likelihood of doing natural science.

2. A fundamental question is: How are students of the lower socio-economic stratum to be brought in sync with those of the upper socio-economic stratum in a way that affords the former the conditions that would predispose them to take natural science? The answer might reside in: (a) exposing them to a greater concentration of educational and learning objects at school/libraries; (b) allowing them the opportunities to benefit from frequent exposure to role models (social nexus) who add cultural value to their lives (e.g., greater exposure to prominent scientists and professionals generally in the Jamaican society); (c) increasing their cultural experiences, where possible, by taking them to drama and dance productions; and (d) reinforcing nationally the broad value of education in improving quality of life so that there is no "disconnect" between the expectations of home and school.

3. A good teacher is necessary for any subject area but arguably very important in terms of encouraging students to do natural science. Both the present study's findings and the related literature are clear on this. Learning approaches such as apprenticeship learning, cooperative learning, and problem-based learning (Cunningham & Cordeiro, 2003) can boost students' learning experiences and make schooling interesting, especially for the less motivated.

4. Related to the foregoing point, it must be noted that provided that students perceive they are weak in mathematics they will not do natural science, and even if they were to, they will not have the confidence to pursue it at more advanced levels. This may frustrate students' plans to pursue scientific careers. It is therefore recommended that particularly skilled people be identified and trained for teaching mathematics at all levels of the school system. They will become "mathematics-only master teachers" who need not be tied to one school but who could be peripatetic.

At the same time, one must be cautious not to send out misleading signals that mathematical competence is all that is necessary for a scientific career. Verbal competence is also important in order to communicate one's findings and indeed to comprehend, in a critical and discerning way, the work, experiments, and so on, of others.

5. Unfortunately, from the data here, the hidden curriculum appears to be experienced negatively. It is recommended that a conscious effort be made, especially in the orientation of new teachers, to impress upon them the possible negative effects of their actions or inactions that can estrange certain students. This should not be a one-time only endeavour but an ongoing part of teacher orientation and training.

6. The finding here that examination outcomes are more important in the subject choice of boys than girls adds further urgency to an investigation of the trend of girls outperforming boys, and further justifies the exclamations of male marginalization and underachievement. It is recommended that while attention be paid to removing the gender bias in subjects and in the school's cultural environment generally, that schools do not overlook the possibility of attrition of boys from natural science because of their poor examination performances. The exam-driven culture might well be inimical to boys' participation and persistence in natural science and their general academic self-esteem.

7. It is opportune to recommend that research in the future should attempt to gather qualitative data, through in-depth interviews with students and their parents, as well as teachers, in order to further probe aspects of these quantitative findings. It would also be useful to examine, via observation (as unobtrusively as possible), the classroom interactions in both single-sex and co-educational schools in specific subject areas, such as physics, mathematics, literature, and English language.

References

Archer, J., & Freedman, S. (1989). Gender-stereotypic perceptions of academic disciplines. *British Journal of Educational Psychology, 59*(3), 306–313.

Archer, J., & Macrae, M. (1991). Gender-perceptions of school subjects among 10-11 year olds. *British Journal of Educational Psychology, 61*, 99–103.

Bailey, B. (2000). Gender myths and realities: Education and women's social advancement in Jamaica. In P. Mohammed (Ed.), *The construction of gender development indicators for Jamaica* (pp. 27–40). Kingston, Jamaica: PIOJ/UNDP/CIDA.

Bailey, B., & Leo-Rhynie, E. (1997). Factors affecting the choice of science subjects by high school students: A pilot study. In B. Carby & V. McClenan (Eds.), *Readings in gender, science and technology* (pp. 47-64). Mona, Jamaica: Centre for Gender and Development Studies & Faculty of Natural Sciences, UWI.

Baker, D., & Leary, R. (2003). Letting girls speak out about science. *Journal of Research in Science Teaching, 40* (Suppl. 1), S176–S200.

Ballantine, J. H. (2001). *The sociology of education: A systematic analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Brickhouse, N. W., Lowery, P., & Schultz, K. (2000). What kind of a girl does science? The construction of school science identities. *Journal of Research in Science Teaching, 37*(5), 441–458.

Broh, B. A. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education, 75*(1), 69–95.

Brutsaert, H., & Van Houtte, M. (2002). Girls' and boys' sense of belonging in single-sex versus co-educational schools. *Research in Education*, *68*, 48–56.

Catsambis, S. (1994). The path to math: Gender and racial-ethnic differences in mathematics participation from middle school to high school. *Sociology of Education, 67*, 199–215.

Cavallo, A. M. L., & Laubach, T. A. (2001). Students' science perceptions and enrollment decisions in differing learning cycle classrooms. *Journal of Research in Science Teaching, 38*, 1029–1062.

Cheng, S., & Starks, B. (2002). Racial differences in the effects of significant others on students' educational expectations. *Sociology of Education, 75*(4), 306–327.

Correll, S. J. (2001). Gender and the career choice process: The role of biased self-assessments. *American Journal of Sociology, 106*(6), 1691–1730.

Cunningham, W. G., & Cordeiro, P. A. (2003). *Educational leadership: A problem-based approach* (2nd ed.). Boston, MA: Allyn & Bacon.

De Graaf, N. D., De Graaf, P. M., & Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: A refinement of the cultural capital perspective. *Sociology of Education, 73*(2), 92–111.

Downey, D. B. (1995). When bigger is not better: Family size, parental resources, and children's educational performance. *American Sociological Review, 60*(5), 746–761.

Dumais, S. A. (2002). Cultural capital, gender, and school success: The role of habitus. *Sociology of Education, 75*(1), 44–68.

Evans, H. (1999). *Gender and achievement in secondary education in Jamaica*. (Working Paper No. 2). Kingston, Jamaica: Planning Institute of Jamaica.

Evans, H. (2001). *Inside Jamaican schools*. Mona, Jamaica: The University of the West Indies Press.

Gallagher, S. A. (1994). Middle school classroom predictors of science persistence. *Journal of Research in Science Teaching, 31*(7), 721–734.

Georgiou, S. N. (1999). Parental attributions as predictors of involvement and influences on child achievement. *British Journal of Educational Psychology, 69*(3), 409–429.

The grade six achievement test (GSAT), 1999. (2000, February). *The Labour Market Information Newsletter of Jamaica, 34*, 1–5.

Hair, Jr., J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hamilton, M. A. (1976). *A study of certain personality, educational and environmental variables associated with science orientation, in a selected group of fifth form students, in secondary schools of Jamaica*. Unpublished doctoral dissertation, The University of the West Indies, Mona.

Haussler, P., & Hoffmann, L. (2002). An intervention study to enhance girls' interest, self-concept, and achievement in physics classes. *Journal of Research in Science Teaching, 39*(9), 870–888.

Jegede, O. J., & Okebukola, P. A. (1992). Differences in sociocultural environment perceptions associated with gender in science classrooms. *Journal of Research in Science Teaching, 29*(7), 637–647.

Kahle, J. B., & Lakes, M. K. (2003). The myth of equality in science classrooms. *Journal of Research in Science Teaching, 40* (Supplement), S58–S67.

Kysel, F., West, A., & Scott, G. (1992). Leaving school: Attitudes, aspirations and destinations of fifth-year leavers in Tower Hamlets. *Educational Research, 34*(2), 87–105.

Lawrie, L., & Brown, R. (1992). Sex stereotypes, school subject preferences and career aspirations as a function of single/mixed-sex schooling and presence/absence of an opposite sex sibling. *British Journal of Educational Psychology, 62*, 132–138.

Ledbetter, C. (1993). Qualitative comparison of students' constructions of science. *Science Education, 77*, 611–624.

Lee, J. D. (2002). More than ability: Gender and personal relationships influence science and technology involvement. *Sociology of Education, 75*(4), 349–373.

Leo-Rhynie, E. A. (1978). *An investigation into the relationship of certain cognitive, environmental, experiential and motivational variables to the academic achievement of selected Jamaican sixth form students*. Unpublished doctoral dissertation, The University of the West Indies, Mona.

Leo-Rhynie, E. A. (2002). Gender and education in the Caribbean: Inclusion, exclusion and impact. *Journal of Eastern Caribbean Studies, 27*(4), 80–99.

Lewis, B., & Collins, A. (2001). Interpretive investigation of the science-related career decisions of three African-American college students. *Journal of Research in Science Teaching, 38*(5), 599–621.

Lightbody, P., & Durndell, A. (1996). The masculine image of careers in science and technology: Fact or fantasy? *British Journal of Educational Psychology, 66*, 231–246.

McCutcheon, G. (1997). Curriculum and the work of teachers. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (pp. 188–197). New York: Routledge.

Milgram, N, & Toubiana, Y. (1999). Academic anxiety, academic procrastination, and parental involvement in students and their parents. *British Journal of Educational Psychology, 69*, 345–361.

Millar, R., & Irving, P. (1995). Academic locus of control in British undergraduate students. *British Journal of Educational Psychology, 65*, 331–340.

Miller, E. (1990). *Jamaican society and high schooling*. Mona, Jamaica: Institute of Social and Economic Research, UWI.

Moore, R. W., & Hill Foy, R. L. (1997). The Scientific Attitude Inventory: A revision (SAI II). *Journal of Research in Science Teaching, 34*(4), 327–336.

Myeong, J., & Crawley, F. E. (1993). Predicting and understanding Korean high school students' science-track choice: Testing the Theory of Reasoned Action by structural equation modeling. *Journal of Research in Science Teaching, 30*(4), 381–400.

Parry, O. (2000). *Male underachievement in high school education in Jamaica, Barbados, and St. Vincent and the Grenadines*. Mona, Jamaica: Canoe Press.

Planning Institute of Jamaica (1993). *Jamaica five year development plan, 1990–1995: Report of the training task force 1992–93*. Kingston, Jamaica: Author.

The reform of secondary education project. (1997, August). *The Labour Market Information Newsletter of Jamaica, 24*, 5–7.

Richardson, A. G. (1982). *The measurement of creativity and related personality inputs among a sample of Jamaican adolescents*. Unpublished doctoral dissertation, The University of the West Indies, Mona.

Richardson, A. G., & Crichlow, J. L. (1995). Subject orientation and the creative personality. *Educational Research, 37*(1), 71–78.

Richardson, A. G., & Cuffie, J. C. (1999). Subject choice, sex-role orientation and learning style: A study of sixth-form students in Trinidad & Tobago.

In A. G. Richardson (Ed.), *Caribbean adolescents and youth: Contemporary issues in personality development and behaviour* (pp. 167–188). New York: Caribbean Diaspora Press, Inc.

Salmon, H. M. (1986). *Factors in achievement and attrition in Spanish at grade nine in Jamaican high schools.* Unpublished doctoral dissertation, The University of the West Indies, Mona.

Schleef, D. (2000). "That's a good question!" Exploring motivations for Law and Business School choice. *Sociology of Education, 73*, 155–174.

She, H., & Fisher, D. (2002). Teacher communication behaviour and its association with students' cognitive and attitudinal outcomes in science in Taiwan. *Journal of Research in Science Teaching, 39*(1), 63–78.

Shu, X., & Marini, M. M. (1998). Gender-related change in occupational aspirations. *Sociology of Education, 71*, 44–68.

Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

Stewart, M. (1998). Gender issues in physics education. *Educational Research, 40*(3), 283–293.

Summerfield, M., & Youngman, M. (1999a). The relationship between personality and attainment in 16-19-year-old students in a sixth form college. I: Construction of the Student Self-Perception Scale. *British Journal of Educational Psychology, 69*(2), 159–172.

Summerfield, M., & Youngman, M. (1999b). The relationship between personality and attainment in 16-19-year-old students in a sixth form college. II: Self-perception, gender and attainment. *British Journal of Educational Psychology, 69*(2), 173–187.

Townsend, M., & Wilton, K. (2003). Evaluating change in attitude towards mathematics using the 'then-now' procedure in a cooperative learning programme. *British Journal of Educational Psychology, 73*(4), 473–487.

The University of the West Indies. Faculty of Pure and Applied Sciences. (2002). *Foundation course, FD12A: Science, medicine and technology in society.* Mona, Jamaica: Author.

The University of the West Indies. Office of the Vice-Chancellery. (1997). *Strategic plan I, 1997–2002.* Mona, Jamaica: Author.

Waugh, R. F. (2002a). Creating a scale to measure motivation to achieve academically: Linking attitudes and behaviours using Rasch measurement. *British Journal of Educational Psychology, 72*(2), 65–86.

Waugh, R. F. (2002b). Measuring self-reported studying and learning for university students: Linking attitudes and behaviours on the same scale. *British Journal of Educational Psychology, 72*(4), 573–604.

Whiteley, P. (1997). Science textbooks in Jamaican high schools: Gender fair? In B. Carby & V. McClenan (Eds.), *Readings in gender, science and technology* (pp. 65-77). Mona, Jamaica: Centre for Gender and Development Studies & Faculty of Natural Sciences, UWI.

Wikeley, F., & Stables, A. (1999). Changes in school students' approaches to subject option choices: A study of pupils in the West of England in 1984 and 1996. *Educational Research, 41*, 287–299.

Wong, R. S. (1998). Multidimensional influences of family environment in education: The case of socialist Czechoslovakia. *Sociology of Education, 71*, 1–22.

Zeidner, M. (1991). Statistics and mathematics anxiety in social science students: Some interesting parallels. *British Journal of Educational Psychology, 61*(3), 319–328.

Appendix

Scales, sample items and alpha coefficients

PARCOMM (5 items, α = .85)

Choices: All the time; most of the time; sometimes; hardly ever; never.

They visit the school to talk with the teachers on my academic progress.

They participate in activities organised by the school.

They attend official meetings of the parent teachers' association or home-school association.

Source: Georgiou, S. N. (1999). Parental attributions as predictors of involvement and influences on child achievement. *British Journal of Educational Psychology*, *69*(3), 409–429.

ParInvol (25 items, α = .89)

Choices: All the time; most of the time; sometimes; hardly ever; never.

They keep track if homework is assigned or a test is expected.

They are interested in knowing what the content of my homework assignments is or what material the test covers.

They keep track if my homework assignments are prepared or if I am prepared for the test.

They generally check over my homework assignments.

Source: Milgram, N, & Toubiana, Y. (1999). Academic anxiety, academic procrastination, and parental involvement in students and their parents. *British Journal of Educational Psychology, 69*, 345–361.

INQUIRE (6 items, α = .83)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

My science teachers tried to develop problem-solving/inquiry skills in me.

My science teachers tried to develop my skills in lab techniques.

My science teachers tried to develop scientific writing skills in me.

Source: Gallagher, S. A. (1994). Middle school classroom predictors of science persistence. *Journal of Research in Science Teaching, 31*(7), 721–734.

INTEREST (13 items, α = .89)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

My science teachers encouraged me to think about a career in mathematics or science.

My science teachers talked to me about the kind of job I might want to do after leaving school.

My science teachers encouraged me to do extra work when I didn't understand something.

My science teachers expected me to do my best all the time.

Source: Gallagher, S. A. (1994). Middle school classroom predictors of science persistence. *Journal of Research in Science Teaching, 31*(7), 721–734.

REASENT (13 items, α = .76),

Choices: Very important; important; of some importance; of little importance; not at all important.

To give myself more choices in the jobs I can apply for.

My parents expected me to go to Sixth Form.

To qualify for a job which gives me fulfilment and satisfaction even though it may not be high-paying.

To properly prepare myself for later life.

Source: Leo-Rhynie, E. A. (1978). *An investigation into the relationship of certain cognitive, environmental, experiential and motivational variables to the academic achievement of selected Jamaican sixth form students*. Unpublished doctoral dissertation, The University of the West Indies, Mona.

FACINFLU (24 items, α = .58)

Choices: Strongly agree; agree; undecided; disagree; strongly disagree.

I took the subjects mainly because I have generally been impressed with teachers who taught me in these subjects.

I have the academic aptitude for these subjects.

I noticed that people who have done these subjects are financially successful in Jamaican society.

These subjects match or fit my self-concept/social identity.

Source: Cavallo, A. M. L., & Laubach, T. A. (2001). Students' science perceptions and enrollment decisions in differing learning cycle classrooms. *Journal of Research in Science Teaching, 38*, 1029–1062.
Adapted by present researcher.

SUBJATT (26 items, α = .72)

Choices: Strongly agree; agree; undecided; disagree; strongly disagree.

Every student should be required to take at least one natural science subject at school.

Natural sciences is important for helping me in my everyday life, e.g., life style, meaning of life, career, etc.

I believe that natural science students should be evaluated more for doing practical projects than for writing classroom tests/exams.

I like my subjects (natural sciences) because they encourage me to search for explanations about why things happen.

Sources:
Cavallo, A. M. L., & Laubach, T. A. (2001). Students' science perceptions and enrollment decisions in differing learning cycle classrooms. *Journal of Research in Science Teaching, 38*, 1029–1062.
Jegede, O. J., & Okebukola, P. A. (1992). Differences in sociocultural environment perceptions associated with gender in science classrooms. *Journal of Research in Science Teaching, 29*(7), 637–647.

Ledbetter, C. (1993). Qualitative comparison of students' constructions of science. *Science Education, 77*, 611–624.

Moore, R. W., & Hill Foy, R. L. (1997). The Scientific Attitude Inventory: A revision (SAI II). *Journal of Research in Science Teaching, 34*(4), 327–336.

Adapted by present researcher.

MALOCS (13 items, α = .82)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

In general I believe that if one is competent and works hard one will get good results in one's studies.

If I want to get a good academic record I have to be competent and I must work hard.

My getting good or bad marks in my examinations is precisely related to whether the topics I have studied come up in the examinations.

I am convinced that whatever I do my teachers will always give me the marks they want to.

Source: Millar, R., & Irving, P. (1995). Academic locus of control in British undergraduate students. *British Journal of Educational Psychology, 65*, 331–340.

CREATIVE (40 pairs of adjectives, α = .88)

Bipolar rating scale: Rating - 1 to 7 (signifying high to low creativity).

1.	**Inventive**	1	2	3	4	5	6	7	**Unoriginal/Imitative**
2.	**Unsystematic/Chaotic**	1	2	3	4	5	6	7	**Neat**
3.	**Daring/Bold**	1	2	3	4	5	6	7	**Timid/Shy**
4.	**Divergent/Deviating**	1	2	3	4	5	6	7	**Conventional/Conformist**
5.	**Adaptable**	1	2	3	4	5	6	7	**Inflexible**
6.	**Spontaneous**	1	2	3	4	5	6	7	**Controlled**
7.	**Extraverted**	1	2	3	4	5	6	7	**Introverted**

Sources:

Hamilton, M. A. (1976). *A study of certain personality, educational and environmental variables associated with science orientation, in a selected group of fifth form students, in secondary schools of Jamaica.* Unpublished doctoral dissertation, The University of the West Indies, Mona.

Leo-Rhynie, E. A. (1978). *An investigation into the relationship of certain cognitive, environmental, experiential and motivational variables to the academic achievement of selected Jamaican sixth form students.* Unpublished PhD dissertation, The University of the West Indies, Mona.

Richardson, A. G. (1982). *The measurement of creativity and related personality inputs among a sample of Jamaican adolescents.* Unpublished doctoral dissertation, The University of the West Indies, Mona.

Richardson, A. G., & Crichlow, J. L. (1995). Subject orientation and the creative personality. *Educational Research, 37*(1), 71–78.

Summerfield, M., & Youngman, M. (1999b). The relationship between personality and attainment in 16-19-year-old students in a sixth form college. II: Self-perception, gender and attainment. *The British Journal of Educational Psychology, 69*(2), 173–187.

MATHINT (8 items, α = .94)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

In my further education, I want to get on a track that has as little mathematics as possible.

A further education with a lot of mathematics does not appeal to me.

In the future I would like to learn more mathematics.

Source: Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

MATHMOT (*7 items,* α = .89)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

I liked mathematics.
I looked forward to mathematics classes.
Mathematics classes were boring.

Source. Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

MATHSELF (*6 items,* α = .86)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

I can learn mathematics if I work hard.
I just cannot learn mathematics.
I am as talented in mathematics as other able pupils in my class.

Source: Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

VERBINT (*8 items,* α = .91)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

In my further education, I want to get on a track that has as little reading/writing as possible.
A further education with a lot of reading/writing does not appeal to me.
In the future I would like to learn more reading/writing courses.

Source: Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

VERBMOT (*7 items,* α = .90)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

I liked reading/writing.
I looked forward to reading and writing subjects.
Reading/wring subjects were boring.

Source: Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

WRITSELF (*6 items,* α = .85)

Choices: False; mostly false; sometimes false/sometimes true; mostly true; true.

I can learn reading/writing subjects if I work hard.
I just cannot learn reading/writing subjects.
I am as talented in reading and writing as other able pupils in my class.

Source. Skaalvik, E. M., & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self-perception and motivation. *British Journal of Educational Psychology, 64*, 419–428.

ACADPROC (*6 items,* α = .76)

Choices: Very true; often true; sometimes true; not true.

When I should do my homework, I put it off again and again.
I find myself doing other things (e.g., TV, music, book) when I am supposed to prepare for an examination.
I begin preparing lengthy papers soon after they are assigned.

Source. Milgram, N, & Toubiana, Y. (1999). Academic anxiety, academic procrastination, and parental involvement in students and their parents. *British Journal of Educational Psychology, 69,* 345–361.

HIDCURR (*16 items,* α = .87)

Choices: Very important; important; of some importance; of little importance; not at all important.

Hard work and effort.
Behaviour in class and how I interact with my peers.
Appearance (clothing, attractiveness, etc.).
My participation in social and extracurricular activities at school.

Various sources:
Ballantine, J. H. (2001). *The sociology of education: A systematic analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

McCutcheon, G. (1997). Curriculum and the work of teachers. In D. J. Flinders & S. J. Thornton (Eds.), *The curriculum studies reader* (pp. 188–197). New York: Routledge.

Summerfield, M., & Youngman, M. (1999a). The relationship between personality and attainment in 16-19-year-old students in a sixth form college. I: Construction of the Student Self-Perception Scale. *British Journal of Educational Psychology, 69*(2), 159–172.

Summerfield, M., & Youngman, M. (1999b). The relationship between personality and attainment in 16-19-year-old students in a sixth form college. II: Self-perception, gender and attainment. *British Journal of Educational Psychology, 69*(2), 173–187.

M-ACH (33 items, α = .92)

Choices: All the time; most of the time; sometimes; hardly ever; never.

I do my best to reach the academic standards that I set for myself.

I set myself the highest standards in academic work which I believe I can achieve.

I set myself realistic but challenging academic goals.

I have confidence in my academic ability to achieve the best that is possible with my ability.

I read widely on a number of academic topics.

Sources:

Waugh, R. F. (2002a). Creating a scale to measure motivation to achieve academically: Linking attitudes and behaviours using Rasch measurement. *British Journal of Educational Psychology, 72*(1), 65–86.

Waugh, R. F. (2002b). Measuring self-reported studying and learning for university students: Linking attitudes and behaviours on the same scale. *British Journal of Educational Psychology, 72*(4), 573–604.

Developing an Agenda for Online Education in the Caribbean: The Importance of Student Perceptions of Quality

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Abstract: With globalization, there has been increasing pressure on tertiary education institutions in the region to move towards the use of new information and communication technologies (ICTs) to widen access to their programmes. In 2004, the University of the West Indies Distance Education Centre (UWIDEC) began using a blended approach to course delivery, which involved online courses as part of the course delivery mix. Between 2004 and 2006, UWIDEC, St. Augustine, developed 12 online courses facing various challenges and achieving some successes. To date, however, while various measures have been adopted to ensure the quality of these courses, no formal quality assurance evaluation has been conducted. This paper presents the findings of student evaluations conducted by UWIDEC, St Augustine. This descriptive study, seeks to highlight the indicators of quality identified by students, and the importance of these indicators in setting an agenda for the expansion of online education in the region.

Introduction

With globalization, there has been increasing pressure on tertiary education institutions in the region to move towards the use of new information and communication technologies (ICTs) to widen access to their programmes. In 2004, the University of the West Indies Distance Education Centre (UWIDEC) began using a blended approach to course delivery, which involved online courses as part of the course delivery mix. Between 2004 and 2006, UWIDEC, St Augustine developed 12 online courses. To date, however, while various measures have been adopted to ensure the quality of these courses, no formal quality assurance evaluation has been conducted. In preparing an agenda for online learning in the region, it is imperative that the quality of courses be given the highest priority and, as part of that, the perceptions of students about quality must be taken into consideration. This paper will reflect on the importance of student perceptions of quality in higher education based on the experience of UWIDEC's blended learning project. Data from student evaluations of two blended courses offered by UWIDEC, St. Augustine, will be discussed in relation to the lessons they can provide in developing an agenda for online learning in the Caribbean.

Quality and Quality Assurance

In August of 1996, the Board for Undergraduate Studies (BUS) of The University of the West Indies (UWI) began its duties, with one of its responsibilities being to plan and direct a system of quality audit and quality assurance for UWI (UWI. Office of the Board for Undergraduate Studies [OBUS], 1997). As stated by Leo-Rhynie (2006), there are many definitions of quality: "it [quality] has been viewed in terms of excellence, of consistency, of meeting certain standards, as transformation of students, as value for money and as meeting market demand" (p. 6).

The definition of quality adopted by the BUS for its work at UWI is one of "fitness for purpose" (OBUS, 2000). However, as noted by former Director of UWIDEC, Professor Badri Koul, although there is an official UWI policy on quality, the institution has not documented a clear position on "the issues of standards and or quality assurance in the case of distance education" (Koul, 2003). In the absence of specific guidelines for distance education within UWI's quality assurance framework, UWIDEC has been planning and

directing the evolution of such a framework specific to our evolving blended approach.

Defining a Quality Assurance Framework for UWIDEC

Existing quality assurance processes and procedures. The term *quality assurance* in education is "used in a general sense to include audit, evaluation, accreditation and other review processes and elements" (Knight, 2003, p. 13, as cited in Gift, Leo-Rhynie, & Moniquette, 2006, p. 92). The BUS identifies two variations of the quality assurance process at UWI, namely, an internal and an external process. The internal process is concerned with the quality of the learning experience of the student while the external relates to the outcomes of the teaching/learning process.

At UWIDEC, internal and, to some extent, external quality assurance processes and procedures have been implemented for aspects of the institution's operations. Most of these processes, while existing in written form in various policy documents, have not been documented as part of a comprehensive quality assurance policy. Moreover, there are gaps in the existing processes, which have been identified by Whiteley (2000) and Koul (2003). Using the Institute for Higher Education Policy [IHEP] (2000) quality indicators to provide a framework, Table 1 outlines the current UWIDEC processes for quality assurance.

Table 1. Existing UWIDEC Processes for Quality Assurance

Quality Indicator	UWIDEC Process/Procedure	Whether Documented
Institutional Support	• Fees paid to academic staff as an incentive for course development • UWIDEC courses recognized for assessment and promotions • Support staff providing course administration assistance and facilitating communication with non-campus sites for course coordinators	✓ *UWIDEC Statement of Policies and Principles*
Course Development	• Team approach • Standards for ideal course development process documented and agreed to by all three course development teams • Standards for when the ideal course development process breaks down • Writer and editor procedures	✓ *Curriculum Development Handbook: Quality Assurance Process and Procedures*
Course Structure/Design	• Clear instructional design process • Use of graphics, photos, and illustrations • Professional page composition • Built-in student exercises and practice opportunities • Professional printing and binding	✓ Course plan forms Style guides Templates
Teaching/Learning Process & Student Support	• Local tutor support • Audioconferencing • Student Support Officer	✓
Faculty Support	• Course development training	✓
Evaluation and Assessment	• Course evaluation • Research Officer	✓

As UWIDEC has expanded since its inception, so too has its area of operations. UWIDEC currently performs tasks in the areas of Admissions/Registration, Course Development, Materials Distribution, Student Assessment and Evaluation, and Student Support. It is clear that existing quality assurance processes and procedures are no longer adequate, particularly as we have moved into online/blended learning.

UWI's Move to Blended Learning

Glenford Howe (2003) quotes the Chancellor's Commission on the Governance of UWI (1994) as follows:

> The challenge facing the university is necessarily a formidable one. Simply put, given the urgency attached to the region's need to remain competitive in a world of increasing liberalization and globalization, the UWI is already finding itself being called upon by governments and peoples of the region to deliver quality education to progressively larger enrolments, and to do so in the context of tight budgetary constraints and often in deteriorating financial situations. (p. 145)

One of the strategies for addressing the challenges faced by UWI is a move for greater utilization of new ICTs. This move has been referred to as eLearning and, in some instances, blended learning.

ELearning, Online Learning, and Blended Learning

ELearning, online learning, and blended learning have been used interchangeably in some cases and have been defined in a number of ways. Following are two common definitions derived from a simple search using "Google.com":

> eLearning is any virtual act or process used to acquire data, information, skills or knowledge. In the context of our research, eLearning is enabled learning, learning in a virtual world where technology merges with human creativity to accelerate and leverage the rapid development and application of deep knowledge. ("eLearning," 2007)

> E-learning most often means an approach to facilitate and enhance learning through the use of devices based on computer and communications technology. Such devices would include personal computers, CDROMs, Digital Television, P.D.A.s and Mobile Phones. Communications technology enables the use of the Internet,

email, discussion forums, and collaborative software. ("Electronic learning," 2007)

ELearning has also been used interchangeably with online learning, which has been defined as:

> the use of the internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience (Anderson & Elloumi, 2004, p. 5)

All these definitions recognize the importance of student interaction in the process of education and all highlight the use of ICTs in teaching and learning.

UWI's eLearning and Blended Learning Experiences

UWI's desire to move rapidly into Internet-based technologies to support teaching and learning has resulted in a mandate in the university's strategic plan for each campus to have online material to support a considerable percentage of its courses. The result of this mandate has been a virtual rush by many lecturers and the resulting uncoordinated offering of a number of online courses. This has resulted in courses of varying quality. A study of the online courses at St Augustine in 2005 indicates that between 2004 and 2005 there was an increase in online courses from 169 to 393 (Edwards-Henry, Thurab-Nkhosi, & Wood-Jackson, 2006). Of concern, however, was the quality of these courses. Data from the study conducted by Edwards-Henry et al. indicate that of the 393 online courses at St Augustine in 2005, 136 were inactive test courses or "shells" that were not populated or used by students.

Of the courses that were active, two-thirds made use of one or more of the pedagogical tools available in the Learning Management System, WebCT. Of the specific tools incorporated into the WebCT courses, the Calendar tool was the most popular. This was probably due to the ease of use of the Calendar and its usefulness to students and

lecturers in terms of disseminating information such as schedules. The least used tools were the Chat and Assignment, with 31% of the courses incorporating the Chat tool and 28% using the Assignment tool. One can therefore question the level of interaction in these courses and, ultimately, the quality and effectiveness (Edwards-Henry et al., 2005). The UWI St Augustine's experience with eLearning up to 2005, however, was one of lecturers trying to keep pace with what was seen as important to the development of the knowledge economy. This, in turn, led to an increase in the use of ICTs but a possible decrease in the quality of some courses.

While UWI, St Augustine's face-to-face students were being introduced to eLearning in a relatively uncoordinated manner, students studying at a distance were involved in a blended learning project. The project was intended to prepare a set of pilot courses incorporating more asynchronous, computer-based technologies in time for delivery in the 2005/2006 academic year.

A total of 13 courses were selected as pilot courses based on the willingness and skills of lecturers/course developers at the Mona, Cave Hill, and St. Augustine campuses of UWI. (The list of courses is attached as Appendix A.) The course developers were content specialists for the respective courses, and each worked with a course development team comprising a curriculum specialist, editor, web designer/multimedia specialist, and technician.

Based on the time frame within which the pilots were to be ready for delivery, a minimal blended learning package was decided on, which included:

- printed resources that UWIDEC traditionally provided;
- a website comprising course outline, course administration details, e-mail, discussion forums, links to resources;
- a CD-ROM comprising lectures (PowerPoint slides with audio and/or video) for 10 of the 13 pilot courses.

A decision was taken to utilize an open source Learning Management System (LMS), called MOODLE, for the development of the course websites, instead of WebCT, which was being used by the St. Augustine Campus. Production of the multimedia CDs was sponsored by a grant from the Organization of American States (OAS).

Online learning brings with it specific academic, technological, and pedagogical challenges. These all impact on UWIDEC's ability to deliver quality online programmes. It is therefore necessary for the organization to devise some way of ensuring that quality standards are met at every stage of the course planning, development, and delivery process. While benchmarking and other quality assurance tools are gaining popularity as universities realize the importance of quality assurance in tertiary education (Inglis, 2005), it is necessary for UWIDEC to devise a framework that is specific to our distributed, multicultural context, and which takes into account areas of operations identified earlier. This framework will require both internal and external processes. The focus of this paper, however, is on one aspect of the internal quality assurance process that has been receiving attention, that is, the importance of student perception as reflected in the student satisfaction approach (Harvey, 2000).

The Importance of Student Satisfaction

The British Quality Assurance Agency and several universities in Britain have emphasized the importance of student feedback in the quality assurance process (Williams, 2002). The student is recognized as "consumer" and principal stakeholder in the higher education system. As a result, feedback from the student and action on this feedback is being given primary importance in maintaining high standards (Harvey, 2000; Williams, 2002). This recognition of the importance of student perceptions has resulted in the development of the student satisfaction approach by Harvey.

The student satisfaction approach requires a process of ongoing exploration and analysis of student views on their learning experience, and the establishment of a procedure to ensure that concerns are addressed. Harvey (2000, p. 3) gives the following reasons why an institution would benefit from an investment in student satisfaction:

1. It demonstrates the institution's commitment to its principle stakeholder-students. Student

satisfaction involves taking student views seriously and acting on them.

2. It focuses on the student learning experience and is instrumental in enhancing student learning opportunities.

3. It provides a clear set of procedures for a process of continuous quality improvement.

4. It ensures that strategic management decisions are based on reliable and valid information about student concerns.

5. It provides a means of benchmarking against which progress over time can be assessed.

While UWIDEC has not formally adopted the student satisfaction approach suggested by Harvey (2000), feedback from students has played and continues to play an important role in quality assurance and programme improvement. Thus far, this has largely been done through student evaluations of the online/blended experience. The following sections will therefore reflect on the student's perceptions of UWIDECs blended learning experience by reviewing the students' experience as reflected in two course evaluations. The implications of the results of these evaluations for future course development will be discussed, as well as wider implications for a student satisfaction approach as part of the quality assurance framework.

Description of the
Blended Learning Courses

In the UWIDEC context, the blended approach means the use of a mix of delivery strategies. A typical blended course, therefore, includes the following elements:

- A print package comprising a self-instructional course manual and a set of readings

- Two to four audio-conferences conducted by a course coordinator/lecturer, which is also made available in a downloadable format on the Web after the live teleconference

- A website, which contains the following:
  - Discussion forums

- Course objectives and overviews for each unit
- Practice quizzes
- Quizzes
- Assignments
- Resources
- An interactive CD (in some cases)

Each course is monitored by a web administrator, the course coordinator, and an online course manager. Students are divided into groups of 25 and each of these groups is facilitated by an etutor with responsibility for making presentations and facilitating the various online asynchronous discussions. Synchronous interactions are kept to a minimum through the audioconferences and two face-to-face tutorials, as required. Students are encouraged to use the discussion forums and e-mail for communication and interaction.

The Course Evaluations

Two weeks before the end of the semester, students were asked to complete a course evaluation developed by the coordinator of the blended learning project. The evaluation comprised 42 close-ended and 3 open-ended questions, and required students to give feedback on various aspects of their online experience using a Likert scale. (A copy of the evaluation is attached at Appendix B.)

Results of the Course Evaluations: Overall Perceptions

For the purposes of this paper, I will focus on the results of the course evaluations for *Mathematics for Social Sciences* and *Introduction to Sociology*, two of the courses offered during Semester 1, 2005/2006. These two courses were selected because they have the largest student enrolments among the courses offered. *Introduction to Sociology* had an enrolment of 475 students and *Mathematics for Social Sciences* had an enrolment of 570 students. They also represent the quantitative and qualitative areas respectively.

Overall, there was a low response rate to the evaluation, with 30% responding for mathematics and 36% for sociology. This could have been due to the proximity to examinations, the impact of

several other questionnaires resulting in questionnaire "burnout," and the perception by students that an evaluation was not important.

Student satisfaction with discussion forums. With regard to their satisfaction with the discussion forums, the majority of students in both courses were very satisfied with the course coordinator's forum, designed to allow the course coordinator to make announcements about the course. They were also very satisfied with the etutors' postings. Students were definitely not satisfied with the unit discussion forums, student queries and concerns, and the chit chat forums. These forums were not compulsory and therefore in many cases remained fairly inactive except for a few persistent, dedicated students who kept the discussion going with the etutors. Tables 2 and 3 present the data on student satisfaction with the various discussion forums in both courses.

Table 2. Mathematics for Social Sciences – Semester 1, 2005/2006
Section A – Discussion Forums

Discussion Forums	Very Satisfied (%)	Definitely Not Satisfied (%)
Course coordinator's	25	3
Getting-to-know one another	6	11
Students' queries and concerns	9	5
Chit chat	5	7
Etutor	17	10
Unit discussion	8	8
Students' questions on unit	9	6

Table 3. Introduction to Sociology – Semester 1, 2005/2006
Section A – Discussion Forums

Discussion Forums	Very Satisfied (%)	Definitely Not Satisfied (%)
Course coordinator's	33	1
Getting-to-know one another	4	6
Students' queries and concerns	9	2
Chit chat	2	7
Etutor	29	3
Unit discussion	13	3
Students' questions on unit	6	2

Tutorial support and assessments. As Tables 4 and 5 indicate, overall, the percentage of students who were very satisfied with tutorial support and assessments in both cases was very low. In both cases, however, the highest percentage of students was very satisfied with the amount of self-assessment exercises. Students were definitely not satisfied with feedback on exercises and activities, and the quality of discussions based on topics in the course.

Access to a computer. While it is clear that most students had easy access to a computer, it was also clear that the main access was not a UWIDEC centre.

What did not go well. When asked what did not go well, many students indicated that they missed the face-to-face interaction and that there was not enough communication between students and tutors. Students also were disappointed with the slow response of tutors and the problems with getting grades, as well as the time it took to get accustomed to the new environment, which many described as impersonal.

What went well. When asked what went well with the course, the most popular responses were the convenience of being able to access a course from virtually anywhere, the opportunity to meet students from other places, the availability of information, and the clear structure and organization of the courses.

The feedback from the course evaluations has highlighted the following quality issues in the online environment that are important to the student:

1. Constant communication with the course coordinator

2. Knowledgeable tutors and timely, relevant interactions with students

3. Meaningful communication with classmates

4. Relevant and sufficient short activities and assessments

5. Timely and continuous feedback on activities and assignments

6. Quality of discussions

7. Convenient access to a computer

8. Making the environment more personal

9. Adequate preparation and orientation to deal with discussions in the online environment

Table 4. Mathematics for Social Sciences — Semester 1, 2005/2006
Section B – Tutorial Support and Assessments

Issues	Very Satisfied (%)	Definitely Not Satisfied (%)
Timeliness of response	9	8
Helpfulness of response	9	4
Assistance in doing exercises	8	8
Feedback on exercises and activities	8	13
Explanation of difficult areas	10	9
Quality of discussions based on topics in the course	8	10
Amount of short assessment exercises	16	3
Mid-semester examination	14	3
Main in-course assignment	7	4

Table 5. Introduction to Sociology — Semester 1, 2005/2006
Section B – Tutorial Support and Assessments

Issues	Very Satisfied (%)	Definitely Not Satisfied (%)
Timeliness of response	13	2
Helpfulness of response	13	2
Assistance in doing exercises	10	3
Feedback on exercises and activities	8	3
Explanation of difficult areas	9	2
Quality of discussions based on topics in the course	7	2
Amount of short assessment exercises	22	2
Mid-semester examination	6	1
Main in-course assignment	10	2

Implications for Further Offerings of the Courses

Harvey (2000) highlights the importance of student feedback for future planning and improvements in programme delivery. In the UWIDEC context, the student evaluation results highlight the need for the organization to pay attention to specific areas to ensure student satisfaction and a quality online course. Foremost among these areas is the preparation and ongoing motivation of course coordinators and etutors. Course coordinators and etutors must be prepared, as far as possible, to "personalize" the impersonal environment and to give timely feedback to students. Coordinators and etutors must ensure that there is adequate opportunity for self-assessment by students, and that for course assessments there is timely grading and meaningful feedback.

On the part of the course administrators, the student evaluations have highlighted the need to focus attention on preparing students to use the discussion tools in the online environment for interaction at all levels. It is clear that students are still not comfortable with this mode of

communication, and even those who may be comfortable discussing formal and informal issues in the face-to-face environment are hard-pressed to function in the "impersonal" online environment. This means greater attention being paid to use of discussion forums in student orientations to the online environment.

Another critical issue that must be addressed, based on the feedback received from students responding to the evaluation, is technical support. Technical problems experienced when completing assignments or online quizzes reduce confidence levels among students. Many students are already uncomfortable with their own levels of skill using new technologies, and technical problems that cannot be quickly and easily resolved for them serve to make them more uncomfortable and reluctant to take full advantage of all the tools available. An efficient, responsive help desk is essential to quality course delivery in the online environment.

Conclusion

Many tertiary level institutions in the region are being pushed in the direction of online learning. Experiences at UWI with online course delivery have highlighted the need to focus on student perceptions of quality and those issues that impact on student satisfaction. More importantly, however, these student satisfaction issues must be seen as an integral part of a broader framework on quality assurance, which addresses those processes and procedures necessary in each area of institutional operation. In the UWIDEC context, areas of operation include Admissions/Registration, Course Development, Materials Distribution, Student Assessment and Evaluation, and Student Support. While feedback from course evaluations provides information mainly for course development, it represents a start in terms of gathering data that highlight the areas of most importance to the students. Additional research must be conducted in the various areas of operations to investigate any gaps in delivery and requirements for the development of a quality programme in the future.

References

Anderson T., & Elloumi, F. (Eds). (2004). *Theory and practice of online learning.* Athabasca, Canada: Athabasca University.

Edwards-Henry, A., Thurab-Nkhosi, D., & Wood-Jackson, A. (2006, October–November). *Quality assurance in online learning at The University of the West Indies: A baseline survey of online courses.* Paper presented at the Fourth Pan Commonwealth Forum on Open and Distance Learning, Ocho Rios, Jamaica.

eLearning. (2005). In *Mountain Quest Institution: Definitions.* Retrieved March 5, 2007, from http://www.mountainquestinstitute.com/definitions.htm

E-learning. (2005). In *Wikipedia: The free encyclopedia.* Retrieved February 24, 2005, from http://www.en.wikipedia.org/wiki/Elearning

Gift, S., Leo-Rhynie, E., & Moniquette, J. (2006). Quality assurance of transnational education in the English-speaking Caribbean. *UWI Quality Education Forum,* No. 12, 92–103.

Harvey, L. (2000). *Student satisfaction manual.* Buckingham, UK: Open University Press.

Howe, G. (2003). *Contending with change: Reviewing tertiary education in the English-speaking Caribbean.* Caracas, Venezuela: IESALC, UNESCO.

Inglis, A. (2005). Quality improvement, quality assurance, and benchmarking: Comparing two frameworks for managing quality processes in open and distance learning. *International Review of Research in Open and Distance Learning* [Online], *6*(1). Retrieved April 24, 2005, from http://www.irrodl.org/content/v6.1/inglis.html

Institute for Higher Education Policy. (2000). *Quality on the line: Benchmarks for success in Internet-based distance education.* Washington, DC: Author. Available from http://64.176.20.195/organizations.php3?action=print ContentItem&orgid=104&typeID=906&itemID=923 9&templateID=1418

Koul, B. (2003, March). New UWIDEC pedagogy. Paper 2 presented to the first meeting of the *UWIDEC Academic Programme Committee*, UWI, Cave Hill Campus, Barbados. Available at http://www.cavehill.uwi.edu/bnccde/APC/

Leo-Rhynie, E. (2006). A concern for quality, a need for accountability. *UWI Quality Education Forum*, No. 12, 5–16.

The University of the West Indies. Office of the Board for Undergraduate Studies. (1997). *Quality assurance at the University of the West Indies: The self-assessment.* Mona, Jamaica: Author

The University of the West Indies. Office of the Board for Undergraduate Studies. (2000). *The UWI quality strategy: The quality assurance system at the University of the West Indies*. Mona, Jamaica: Author.

Whiteley, P. (2000). Assessing the quality of distance education: The case of the University of the West Indies. In *Proceedings of the University of the West Indies Small States Conference,* (pp. 240–248). Mona: UWIDEC.

Williams, J. (2002, September). *The student satisfaction approach: Student feedback and its potential role in quality assessment and enhancement*. Paper presented at the 24th EAIR Forum. Prague.

Appendix A: Pilot Courses for Blended Learning Project

	Course ID	Course Title	Campus
1.	SY14G	Introduction to Sociology	St. Augustine
2.	FD11A	Caribbean Civilization	St. Augustine
3.	MS23B	Caribbean Business Environment	St. Augustine
4.	EC14C	Mathematics for Social Sciences	St. Augustine
5.	FD12A	Science, Medicine and Technology	St. Augustine
6.	MS33B	Business Strategy & Policy	Cave Hill
7.	MS34B	International Business Management	Cave Hill
8.	MS15A	Introduction to Financial Accounting	Mona
9.	MS31B	Management Information Systems II	Mona
10	MS32A	Human Resources Management	Mona
11	ED33A	Management Information Systems	Mona
12	ED33N	Guidance and Counselling in Education	Mona
13.	MS15B	Introduction to Cost & Management Accounting	Mona

Appendix B: Evaluation Questionnaire

Dear Student,

As indicated in the Week 11 message of my column on the home page, I would appreciate if you would complete this questionnaire about your online learning experience of this course, please. We rely on your comments to assist us as we continue to seek ways to improve this aspect of the delivery of our courses.

There are four (4) sections of closed items and one (1) section with three open-ended questions. The entire questionnaire should not take you more than 30 minutes to complete.

Please remember to complete a questionnaire for each of the blended learning courses that you are enrolled for.

When you have completed all questions click the 'Submit all and finish' button
Ignore any statements about your 'score' or 'grade'.
This survey is intended to get your feedback only.
Your answers are not being graded.

Thank you.

Olabisi Kuboni

Dianne Thurab-Nkhosi

Time limit: 1 hour

The quiz is available until: Monday, 4 December 2006, 11:55 PM
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1 (2362) SECTION A

How satisfied were you with the use of the following tools in the online learning space for this course? Rate your responses using a scale of 5 to 1 as follows:

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1. Course Coordinator Announcements
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

2 (2363) 2. Getting-to-Know-one-Another forum
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

3 (2364) Tutor-Student Exchange
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

4 (2365) Chit-chat (where applicable)
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

5 (2366) E-tutor presentations
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

6 (2367) Unit discussion forums
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

7 (2369) 7. Students' Questions on the Unit
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

8 (2370) SECTION B

How satisfied were you with the following aspects of the online learning experience. Rate your responses using a scale of 5 to 1 as follows:

Timeliness of response to your general queries and concerns
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

9 (2371) Helpfulness of response to your general queries and concerns
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

10 (2372) Assistance in doing exercises and activities for practice
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

11 (2373) Feedback on exercises and activities that you did on your own.
Answer:
a. 5 – very satisfied
b. 4 – satisfied

c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

12 (2374) Explanation of difficult areas of the course
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

13 (2375) Quality of discussions based on topics or issues from the course
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

14 (2376) Amount of short assessment exercises (i.e. quizzes, short essays, short-answer questions)
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

15 (2377) The mid-semester examination (if applicable)
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

16 (2378) The main in-course assignment (if applicable)
Answer:
a. 5 – very satisfied
b. 4 – satisfied
c. 3 – fairly satisfied
d. 2 – not satisfied
e. 1 – definitely not satisfied
f. N/A – not applicable

17 (2379) SECTION C

How confident did you feel performing the following tasks?
Rate your responses using a scale of 5 to 1 as follows:

Posting a message or other information.
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

18 (2380) Locating postings in the course web site.
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

19 (2381) Deciding on the most appropriate area of the course website to make a posting
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

20 (2382) Contributing to the discussion of a course-related topic or issue
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

21 (2383) Starting a discussion on a course-related topic or issue
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

22 (2384) Asking the tutor to explain something you did not understand.
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

23 (2385) Uploading an assignment
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

24 (2386) Checking for the grade and feedback on an assignment
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
 f. N/A – not applicable

25 (2387) Composing an essay or report using a word-processor
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
 f. N/A – not applicable

26 (2388) Composing your working of a mathematics or accounting problem using a word-processor (if applicable
for this course)
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

27 (2389) Using a link to search other websites
Answer:
a. 5 – very confident
b. 4 – confident
c. 3 – fairly confident
d. 2 – not confident
e. 1 – definitely not confident
f. N/A – not applicable

28 (2390) SECTION D

To what extent would you say that you agree with the statements below about your online learning experience?
Rate your responses using a scale of 5 to 1 as follows:

You had no difficulty finding out who your e-tutor was for this course.
Answer:
a. 5 – completely agree
b. 4 – agree

c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

29 (2391) You know the names and home-countries of the members in your group
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

30 (2392) You have made friends with the other members of your group.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

31 (2393) You have engaged in light personal exchanges with other members of your group.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

32 (2394) You have discussed matters of general interest with other members of your group.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

33 (2395) You feel as though you know your tutor.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

34 (2396) You find your tutor to be knowledgeable about the course.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree

e. 1 – definitely do not agree
f. N/A – not applicable

35 (2397) You find your tutor's postings to be clear and well-focused.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

36 (2398) Your tutor made useful postings regularly throughout the semester.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

37 (2399) You think your tutor has done what he/she was expected to do.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

38 (2400) Your tutor's performance was of a high standard throughout the semester.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

39 (2401) Your tutor's performance improved as the semester progressed.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

40 (2402) You have easy access to a computer with Internet connectivity
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

41 (2403) You use a computer at your local UWIDEC site/center most of the time.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

42 (2404) The members of staff at your local UWIDEC site/center have provided good support.
Answer:
a. 5 – completely agree
b. 4 – agree
c. 3 – agree to a certain extent
d. 2 – do not agree
e. 1 – definitely do not agree
f. N/A – not applicable

43 (2405) SECTION E

Please provide your own answers to the following questions:

What, if anything, did not go well for you in the online learning experience of this course? Please explain in no more than 8 lines.
Answer:

44 (2406) What, if anything, went well for you in the online learning experience of this course? Please explain in no more than 8 lines.
Answer:

45 (2407) How did the online Learning experience in this course compare with your over all experience last semester?
Answer:

Issues of Language and Literacy Revisited

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Abstract. This paper reviews the present state of academic and medical knowledge on the problems that children encounter in acquiring both language and literacy, and concludes that we need to face the issues on other fronts than those we are engaging at the present. On the one hand, there are issues of acquiring literacy in the vernacular before transferring those skills to the Standard as the second variety. On the other, there is a source of the problems that we have not begun to engage—the need for full Speech-Language screening of children on school entry so that conditions which are likely to result in potential deficits in both language and literacy can be identified and intervention measures implemented to ensure that these deficits are largely overcome. Now that we are training persons who can support our few Speech-Language pathologists in the screening, process, it is time for us to take on board seriously the 12–20% of children we are losing every year through failure that is not of our making.

Introduction

This paper is concerned with the need within the educational system to adequately assess the language competence of children entering primary school in Trinidad and Tobago, as well as the wider Anglophone Caribbean, in order to be able to provide them with the best language education towards their acquiring both literacy and Standard English (SE) in an optimum time frame. It argues that we can do a great deal to enhance the acquisition of both literacy and Standard English (SE) by:

- a more specific, focused, and targeted language education policy, particularly at the primary level; and
- full screening for language and learning disabilities at school entry, followed by specific interventions to eliminate problems in the early years of education.

Background

In Trinidad and Tobago, each child is now guaranteed free primary, secondary, and tertiary education, and considerable financial support, as well as training and research, is being poured into this sector. Despite this, the examination results in English and the overall literacy figures remain relatively low, close to the rest of the Anglophone Caribbean, and way below the figures for the UK:

> whereas 33% (Trinidad & Tobago was 36.7% in 1994-6) of an elite 13% of the West Indian secondary school-age population pass English examinations on an annual average, 57% of 92% of the equivalent age-cohort in the UK pass equivalent English examinations. (Craig, 1999, pp. 28–29).

Craig noted that six years of schooling does not guarantee functional literacy among our youth (p. 23). Of trainees in SERVOL skills programmes in Trinidad and Tobago, marginal literacy was reported in 32% of trainees. This low achievement rate waits to be adequately accounted for.

In a rapidly globalizing world, it behoves us to equip the next generation with bi-varietal language skills, that is, the capacity to fully utilize both the local Creole dialect and the local variety of Standard English. While, traditionally, Trinidad and Tobago espoused mother tongue education programmes in Standard English that gave insufficient consideration to the Creole language background of the majority of Anglophone Caribbean students, the post-Independence era has witnessed more forward thinking. In 1975, the Ministry of Education recognized the Creole as a language in its own right to be accepted in the school system via a policy of transitional

bilingualism (Craig, 1980). Why then has the problem persisted?

Refocusing of the Issues

Firstly, the complex, evolving language situation in the region has resulted in children having diverse language competencies on school entry. A majority of them speak an Anglophone Creole— basilectal or mesolectal, or both—with minimal standard exposure; while some have more balanced exposure to the Standard and the Creole, and a few have greater exposure to the Standard. This diversity of language competencies on school entry demands sensitive and complex handling. While tolerance of the Creole has been advocated and, to some extent, achieved, language education policies that map out an effective plan for learning, given the fact that the majority of students are Creole and not Standard speakers, have not been put in place.

In addition, the increase in status of the Creole has led to contexts for usage of the two codes becoming increasingly mixed. While, broadly, the Creole serves the functions of solidarity, friendship, emotion of all kinds, and national identity, and the Standard is the code of serious conversation for specific topics as well as of "official" and institutional speech and documentation, the Creole is increasingly coming through in these more constrained contexts. The removal of censure has been a healthy development for Creole-speaking children, but the backlash effect has been that they hardly hear Standard exclusively in any context.

Further, and of note, is the fact that the affirmation of the Creole has resulted in demotivation towards the Standard language, which is perceived as the language of the former colonizer with little real relevance to the average child's life. Some argue that children, in fact, know far more Standard English than they acknowledge, at least by the secondary school level. They hide it, not deliberately, but because it has no function in their world and no relevance to their goals and aspirations.

In this complex situation, very specific guidelines are needed to deal with the language situation if even transitional bilingualism is to be achieved. Primary teachers who have come through teacher training display tolerance of the Creole, but admit that they do not always feel adequately trained to deal with the language situation. In addition, many teachers, particularly at the primary level, do not themselves discern clear cut-off points between Creole and Standard, and, additionally, have not had the necessary training on integrating the Creole into the early primary curriculum while yet providing contexts that teach and demand Standard English.

Added to this, there is a problem of limited recognition of language and learning disabilities in the classroom. There is no screening of children entering school, save for hearing in some cases, and problems of literacy that arise are perceived as problems stemming exclusively from children's Creole-speaking background, although, in recent years, "dyslexia"—a single and very particular perceptual disorder—has been invoked. Special education teachers are not trained to screen to identify disabilities or to work appropriately with children who have them. Since the introduction of a Certificate in Speech-Language Pathology at The University of the West Indies (UWI) in 2005, we have been inundated with applications from teachers, social workers, nurses, and parents, who recognize limitations in the speech of those close to them but who have no resource available to provide help and support. Our petitions to Government, however, have not been acknowledged.

This is highly problematic when it is estimated that 10–12% of any population has a functional communication disorder. Furthermore, as reported by the United States Preventive Services Task Force (USPST), 5–8% of children under five have speech and language delays that are associated with subsequent reduced academic performance and associated psychosocial problems. Speech problems may include articulation disorders, stuttering, or voice problems. Language problems may include expressive language delay, which may exist without receptive language delay, but can often co-occur in children. These language problems can involve difficulty with grammar (syntax), words or vocabulary (semantics), the sound system of speech (phonology), units of word change (morphology), and the use of language, particularly in social contexts (pragmatics). The USPST reports that untreated speech and language delay in children younger

than 5 years of age has shown persistence rates ranging from 40% to 60%.

Speech disorders can directly or indirectly affect the child's academic performance in the school years. Developmental Apraxia of Speech (DAS), which involves a lack of voluntary control over articulation, can directly affect oral reading and overall reading shills, while the psychosocial aspects of its manifestation can be quite negative. Language disorders more directly affect academic achievement since language is the primary medium of instruction and testing in classrooms, whatever the subject area. As students move from the "language learning" phase to the "language-for-learning" phase, the problems with spoken language can lead to underachievement in literacy and, finally, academic underachievement.

Two such disorders are Specific Language Impairment (SLI) and auditory processing disorders. SLI is a developmental language disorder in which there is no concomitant neurological insult or general developmental delays or cognitive deficits. Children with SLI present with receptive and expressive language problems, especially in the area of grammar, and an estimated 40–75% have difficulty with reading. Auditory Processing Disorders arise from an impairment in auditory processing, which is a neural process that is related to but not the same as comprehension, and not an impairment in hearing acuity. It may result in problems such as difficulty with auditory memory, auditory figure-ground processing, and auditory integration.

Children with these disorders have problems with the various language tasks required in the classroom and in their social interactions. These problems often continue throughout their school lives and affect their quality of life. Aram, Ekelman, and Nation (1984), in a follow-up study of adolescents who had been identified with language disorders in preschool 10 years earlier, found that the adolescents had persistent problems in language skills, had great academic difficulties, and were identified as less socially competent by caregivers and as having more behavioural problems than most of their peers. The link with further social and psychological problems in later life is an area that needs to be investigated, especially in our developing economies in the Caribbean.

Solutions

Language Education Policy

Recently, Craig (1999, 2006) has provided explicit and detailed guidelines for English teaching in the Anglophone Caribbean. Not only do his texts provide practical language units which supply the reference material that teachers need at both linguistic and pedagogical levels but, simultaneously, they also provide a means of teaching based on language awareness being inculcated in the students, and motivation towards the Standard being established thereby:

> Motivation can only develop if it is based on a perception of language contrasts, and an acceptance by students that English has to be used by persons, including themselves, who happen to placed in certain situations, and who have to function in certain roles. (1999, p. 42)

Craig's approach includes the following:

1. The development of early language awareness in children.

2. Contrastive teaching of Creole and Standard.

3. Differential teaching policies dependent on whether the Standard structure being discussed is known, passively known or not known at all.

4. Establishment of literacy, firstly in the vernacular and only secondly in the Standard, to prevent the double bind of acquiring an entirely new skill in what is tantamount to a foreign language.

5. Gradual shift to Standard as the full language of instruction, with the maintenance of vernacular-based activities and classes that validate the home code.

In short, since the late 1960s when item 3 above was first elaborated (Craig, 1971), Craig has systematically been providing us with the much-needed tools to effect a cogent language education policy, but it waits full implementation.

Special Needs Policy

Not only is it the case that 10–12% is a conservative estimate of the percentage of any given population that exhibits functional communication disorders, but also there are language difficulties and deficits that establish themselves in particular kinds of bi- and multi-lingual environments, in which the home code of the child is not fully recognized and respected in the mainstream of society—a situation that persists to some extent in the present-day Trinidad context. This has been researched and documented by Cummins (2000), Skutnabb-Kangas (1981), and, most recently in a very different language context from those that focus on European, US, and Canadian contexts, by Eapen, Zoubeidi, and Yunis (2004) in the United Arab Emirates.

In Standard English educational contexts, language-related problems are compounded for speakers of African American Vernacular English or Anglophone Creoles because of the fact that the language features of their home code include some associated with Specific Language Impairment (SLI), such that screening measures have to be carefully selected to avoid misdiagnosis. Youssef (2005, p. 224) has discussed this problem in some detail and notes, with Oetting and McDonald (2001), that it is possible to distinguish morphosyntactic patterning clearly between normal Creole language users and other learners with SLI. Moreover, a screening protocol has been developed to identify this kind of critical difference (Washington & Craig, 2004), such that we can truly see progress being made in the development of appropriate instrumentation.

However, there is no screening for speech and language disabilities in Trinidad and Tobago prior to school entry or even during primary schooling, despite the fact that it has been established as normative throughout the USA and Europe for the last 12–20 years. While such societies are now seeking methods of liaising with parents and communities to identify such conditions earlier than ages four to five (e.g., Laing, Law, Levin, & Logan, 2002; Maas, 2000), our Caribbean reality remains one in which no screening beyond what may be privately obtained goes on. No screening necessarily means no potential for follow-up and

remediation, and a potential loss to society of some of its most valuable citizens.

The Executive Summary of the Trinidad and Tobago Ministry of Education's policy (1993–2003) in respect of special needs is quoted below:

> A comprehensive set of proposals has been set out for the delivery of appropriate and professional services to our learners with special needs:

- Mainstreaming of children with special needs except for severe cases will be the norm.
- Diagnostic Prescriptive Centres must be established to provide the necessary support services to schools, to educate the public at large about their responsibilities and to provide central administration with information about the training needs for the system.
- *All schools must develop clearly articulated plans and programmes for children with special needs.* (italics added)
- Special schools must continue to provide specialized services and should be given the requisite financial and technical assistance. They should also be provided with access to training programmes mounted by the state. (Trinidad and Tobago. National Task Force on Education, 1994)

These measures demonstrate a heart set towards the development and integration of children with special needs into the mainstream of education, but the failure to train teachers adequately makes a mockery of the theoretical and even ideological position espoused. In 2000, in a detailed UNESCO monograph, Bergma made a cogent argument for inclusive education for children with special needs in the Caribbean, with specific reference to Jamaica and Trinidad and Tobago. While we now have in Trinidad and Tobago, special needs educators in schools in each area, they remain inadequately trained to modify and potentially rectify a range of the most common speech, language, and learning disabilities.

Our argument is then that screening must take place at the very latest before primary school

entry, and follow-up support and remediation must be provided to children identified with a range of speech and language disorders and delays. As UWI is now training its second cadre of graduates with the Certificate in Speech-Language Pathology, it is becoming more possible to envisage linking these persons, as Speech-Language Assistants, to fully qualified Speech-Language Pathologists—of which group, there are relatively few in the country—to carry out massive screening and intervention measures. A government grant was awarded in 2007 for a piloting of this exercise and the work is ongoing. Our frustration is compounded by a recognition that it is lack of awareness of the precise need rather than a lack of caring on the part of Government that continues to constrain the potential for meaningful intervention. Progress is being made towards more support, for which we are grateful.

Conclusion

We hope this paper will serve to open up the education and health care system to the nation's specific needs in early primary education, and even before at the early childhood education level. As we look to the future and to Vision 2020 we hope that the nation will embrace the suggestions made in the spirit in which we make them. If the future of our nation remains "in the children's school bags," we must try to ensure that those schoolbags are meaningfully filled.

References

Aram, D. M., Ekelman, B. L., & Nation, J. E. (1984). Preschoolers with language disorders: 10 years later. *Journal of Speech and Hearing Research, 27*(2), 232–244.

Bergma, S. (2000). *The regular classroom as battleground for inclusive special needs education: An assessment of options of special needs education in the Commonwealth Caribbean.* (EFA in the Caribbean: Assessment 2000. Monograph Series; No. 26) Kingston, Jamaica: UNESCO.

Craig, D. (1971). Education and Creole English in the West Indies: Some sociolinguistic factors. In D. Hymes (Ed.), *Pidginization and creolization of languages* (pp. 371–392). Cambridge, UK: Cambridge University Press.

Craig, D. (1980). Models for educational policy in Creole-speaking communities. In A. Valdman & A. Highfield (Eds.), *Theoretical orientations in Creole studies* (pp. 245–266). New York: Academic Press.

Craig, D. (1999). *Teaching language and literacy: Policies and procedures for vernacular situations.* Georgetown, Guyana; Education and Development Services.

Craig, D. (2006). *Teaching language and literacy to Caribbean students: From vernacular to Standard English.* Kingston, Jamaica: Ian Randle.

Cummins, J. (2000). *Language, power, and pedagogy. Bilingual children in the crossfire.* Clevedon, England: Multilingual Matters.

Eapen, V., Zoubeidi, T., & Yunis, F. (2004). Screening for language delay in the United Arab Emirates. *Child: Care, Health and Development, 30*(5), 541–549.

Laing, G. J., Law, J., Levin, A., & Logan, S. (2002). Evaluation of a structured test and a parent led method for screening for speech and language problems: Prospective population based study. *British Medical Journal, 325*, 1152–1154.

Maas, W. (2000). Early detection of speech and language delays in the Netherlands: The case for integrating primary and secondary prevention. *Child: Care, Health and Development, 26*(2), 150–162.

Oetting, J. B., & McDonald, J. (2001). Non-mainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Impairment, 44*, 207–223.

Skutnabb-Kangas, T. (2000). *Linguistic genocide in education – or worldwide diversity and human rights?* Mahwah, NJ: Lawrence Erlbaum.

Trinidad and Tobago. National Task Force on Education. (1994). *Education policy, 1993–2003 – Trinidad and Tobago: Executive Summary.* Port of Spain, Trinidad: Author. Retrieved from http://www.ilo.int/public/english/employment/skills/hrdr/init/tri_2.htm

United States Preventive Services Task Force. (2006). *Screening for speech and language delay in preschool children: Recommendation statement.* Rockville, MD: Agency for Healthcare Research and Quality.

Washington, J., & Craig, H. (2004). A language screening protocol for use with young African American children in urban settings. *American Journal of Speech-Language Pathology, 13*, 329–340.

Youssef, V. (2005). Varilingualism: A discrete sub-type of language competence. *Journal of Multilingual Communication Disorders, 3*, 216–226.

PART 3

EDUCATIONAL ADMINISTRATION

When Choosing Might Mean Losing:
The Construction of Secondary School Choice in the Republic of Trinidad and Tobago

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Abstract. Trinidad and Tobago has historically operated a system of open enrolment for all schools. This open access to schools by families is a feature rooted in the historical conflict between Church and State over schooling. Open enrolment is founded on the principle of the right of parents to choose schools for their children, first argued in the 18th century by the Church, and now included as a provision in the Trinidad and Tobago Republican Constitution. Choice of secondary school is embedded in the rules of operation for the placement system at eleven-plus, with parents required to list four or six choices. Depending upon the candidates' score in the examination, they receive one of their choices or are assigned by the Ministry of Education. To study the system of school choice in Trinidad and Tobago, information was collected from the registration database of 11 eleven-plus examinations spanning the period 1995–2005. Student choices were analysed along with the demographic and geographic data. In the mixed method research design, data were also collected from parents and children from four schools across the country. The data indicate that the choice-making process is complex, fluid, and dynamic, with multiple markets and different consumer types. Families made decisions with children also having a say. Choice making involved a dual process of valorization and demonization of schools, with a tendency to more often reject new sector government schools. The value placed on first choice "prestige" schools was related to consumer values of safety and security. Parents valued a school if it could shepherd their beloved offspring through life's rocky courses.

Introduction

Internationally, parental choice of schools has become an important education reform strategy (Weiss, 1998). Such policy is often undertaken with the stated intention of improving the quality of education. However, the move towards open enrolment is also part of a larger series of economic, social, and political changes that have occurred in the past three decades (Whitty & Edwards, 1998). A policy that promotes parental choice of schools would, in theory, allow families to select schools of their choice. In this way, parents are empowered to choose schools they desire for their children. The provision of choice will then force schools to compete, thereby creating an education market that is more responsive to stakeholders' needs. Thus, in the current choice reform agenda, parental choice and increased competition between schools are closely linked phenomena.

While, in reality, choice mechanisms are complex and outcomes often contradictory, in theory, the introduction of choice provides opportunities for excellence in schools and families (Bomotti, 1998). On the one hand, parents might choose to send their children to high-quality or specialized schools within a diversified market, thereby maximizing their education experience. On the other hand, schools can attract clients who truly value the particular product provided by a school. Greater parental choice in an education system forces schools to interact with stakeholders and to adopt market-oriented practices in planning towards improvement. Of course, such a benefit-laden scenario is quite simplistic, and in real life there are many weaknesses and imperfections within choice systems. These flaws and distortions include unintended consequences such as greater inequity and school stratification, ethnic segregation, and limited choice-making capacity for some families (Saporito, 2003; Wells, 1991).

School choice systems have been implemented in all parts of the world in both developed and developing countries (Salisbury & Tooley, 2005). Notable examples of open enrolment systems in the developed world are the United States (US), Sweden, New Zealand and the United Kingdom

(UK); and in the developing world, Chile and Argentina. In the UK, the choice system was developed as part of the education reform agenda of the 1988 Education Reform Act (Carl, 1994). This act created a system of open enrolment based on parental preference. The multiple innovations introduced in this reform package included (a) local management of schools, (b) pupil-led funding, (c) the abolition of school catchment areas, (d) parental choice, (e) specialist schools, and (f) more accessible "consumer" information (Giamouridis, 2003). In theory, parents could select any school available and schools could only reject applicants if they were physically full. In the developing world, Chile has operated a school choice based on vouchers since 1982. The voucher is a per capita subsidy, which promotes competition between the different types of schools to attract and retain students financed from the fiscal budget (Sapelli, 2005).

Choice Without Explicit Design

Moe (2002) has argued that whether or not there are negative or positive outcomes associated with open enrolment depends upon the structure and "rules" of the choice system. He noted that:

> The simple way to think of it is that school choice always operates within a structure— a framework of rules—which in turn has a lot to do with the kinds of outcomes choice will ultimately generate. In some structures, choice will lead to equity problems. In others, it will not. In still others, it will tilt the playing field in favor of the disadvantaged and aggressively promote the cause of social equity. (p. 180)

Thus, to evaluate the system in Trinidad and Tobago, it is necessary to explicate the system of rules and the historical traditions associated with parental choice. Although it was never explicitly designed to create a competitive education free market, in theory, Trinidad and Tobago has historically operated an open enrolment system that allows unrestricted choice in both the primary and secondary school sectors.

The most visible choice structure operates at the transition between primary and secondary school. This system of school choice, installed in 1961, is an integral part of the placement system at eleven-plus. The eleven-plus selection system was first established in Trinidad and Tobago in an attempt to provide a standardized system of access to secondary schools, which were a scarce resource. This system remains up to the current period. Currently, students who are about to take the eleven-plus examination are allowed to select a number of schools and are then assigned to one of these schools based on their performance in the examination. It is also possible for students to be assigned to a school outside their choice if the schools they choose are popular with the other candidates. Thus students also compete for the schools of their choice. The number of schools to be chosen by candidates' families has varied over the years. Initially there were four choices, but this was increased to six in 2001 and again reduced to four in 2006.

A question of concern for the Ministry of Education is how have these additional choices been used. Notably, although there are several choices, in reality the first choice school is the most highly valued outcome. Indeed, some schools, most of them the older traditional colleges, high schools, and convents, have come to be known as "first choice schools." These schools are held in high value or prestige by most stakeholders. Interestingly, the value attached to schools appears relatively stable and, as such, the market does not have a dynamic and fluid nature. Dependency theory would suggest that the choice system in Trinidad and Tobago should be relatively stable and conservative. Indeed, the system has survived numerous attempts at policy alteration, including the proposed removal of the Common Entrance Examination (1998), introduction of universal secondary education (2001), and proposals for zoning of schools in numerous policy papers.

While Campbell's (1997) historical work does not acknowledge the operation of the Trinidad and Tobago education market, he is keen to highlight the relative stability of the value of the traditional school product:

> What became clear is that the newer government schools established between 1958 and 1971 – not to mention the junior secondary and senior comprehensive

schools of the 1970s – did not have the academic esteem of the pre-1958 denominational secondary schools. This was understandable and had less to do with the denominational or government character of the school and more with the age, tradition and experience of the schools and their staff. (p. 94)

With this context in mind, it is useful to explore the value attached to new school types recently introduced into the system. These include the Secondary Education Modernization Programme (SEMP) high schools and new denominational schools, such as Vishnu Boys' and Bishop's East. Changes in perceived value, as measured by the number of families choosing these new products, will help us better understand the forces that drive the education market in Trinidad and Tobago.

Arguably, the original intention of the Trinidad and Tobago choice system may have been to ensure continued elite access to the traditional higher-quality, denominational schools, as newer schools were built. Campbell (1997) confirmed this intent, noting that:

> The system of recruiting students into secondary schools also worked in favour of those schools already better patronized by children of middle and upper class parents. The parents of the top 15 percent (or some other variable percentage) in the Common Entrance Examination (which replaced the College Exhibition Examination) were guaranteed entry for their children to the secondary school of the first choice. (p. 94)

Campbell's analysis implied that what was important was not just the examination by itself, but the entire selection system, inclusive of the system of rules for making choices. It is this selection/placement system that maintains the character of the education system and the perceived division of schools from highly valued to worthless. Indeed, if the eleven-plus was to be coupled with a zoning mechanism, access to some traditional schools would be substantially reduced. Thus, it is the facility of open enrolment to secondary school coupled with the eleven-plus that ensures elite hegemony. This occurs under the guise of the legitimate right of individual families to access education in the school type of their choice. The system is important because it gives the unfair allocation of schools legitimacy and is defensible on the basis of education theory.

Competition between the two sectors (denominational and state schools) has deep historical roots in the conflict between the Church and the State. After slavery, in Trinidad and Tobago, the Christian churches were at the forefront of building schools both in the elementary and secondary school system. Thus, Campbell (1996) reminded us that:

> From the late 1830s the development of education in Trinidad was characterized by fairly constant tension and sporadic struggles between government and the churches, and between one church and another. The right to have denominational schools became an article of religious faith. In particular the Roman Catholic social doctrine of the preeminence of the family in the provision of education, though more usually stated during the nineteenth century as the primacy of the church, provided a firm philosophical base from which to fight off the centralizing efforts of Protestants oriented or secular governments. (p. 271)

From very early on, then, the question of the role of the family in determining and controlling the nature and type of education provision became a central societal issue in Trinidad and Tobago.

Nevertheless, these early schools were not truly designed to foster educational productivity, at least not in the narrow sense of the term. There was certainly little intent on fostering social mobility among the local groups. Instead, at the elementary level, the aim was to promote standards of morality and to cement denominational loyalties, with secondary education initially for the white upper class and narrowly modelled on the English grammar school (Campbell, 1996). Williams (1969), too, concluded that there was no noble purpose to early secondary schooling in Trinidad and Tobago:

> The purpose of the secondary school in Trinidad was to ensure the Anglicanisation of the colony. It

consciously took the English public school as its model. The external examinations of Oxford and Cambridge, in which Trinidad was the first colony to participate, strengthened the prevailing English influence. (p. 712)

In time, competition within the secondary sector between the Church and State exploded in an intense war between two secondary schools, St. Mary's College (CIC) and Queen's Royal College (QRC), the most famous colleges in the country, both situated in Port of Spain (Campbell, 1997). This Church–State conflict would be further complicated with the emergence of new schools, some built by other denominational bodies and others by the Government in the 1950s to 1970s. The recent introduction of SEMP schools in the 1990s, built by marginalized denominational groups, added further fuel to the pyre.

The conflict between Church and State over schooling also intensified after independence with the establishment of a Concordat between Church and State. Campbell (1997) argued that the roots of conflict extended to fundamental differences in beliefs, ideologies, and values. Critical among these, as he believed, was the right of the family to choose the type of education:

> This episode was not simply a struggle of QRC supporters against CIC supporters....It was a struggle between the churches and the government at the highest level: at the level of the heads of the churches and the Cabinet of the country. It was a struggle in which each side declared conflicting ideologies fundamentally incompatible....For example, the Roman Catholic Church's claim that the family and not the government had primary responsibility to provide education was quite novel, but was based on long-established Roman Catholic social principles. (pp. 85–86)

To be sure, Campbell's analysis is naïve because it ignores the critical influence of social class, and the underlying political and personal conflicts and contradictions that were publicly and privately held. More important, in the context of school choice, the negotiations and agreements of

that era would lead to a unique solution in the public school system. As in the UK, the competition is focused on two types of schools within the public school system—government and government-assisted denominational schools. Significantly, though, the government-assisted schools sector is much larger and even dominant in terms of market value and resources. While the government-assisted schools have sometimes used arguments similar to private sector schools of the US when challenged, in reality, their heavy reliance on government funding and the 1966 Education Act make them essentially agents of the state. In reality, private sector secondary schooling that is independent of the state remains negligible in the Republic of Trinidad and Tobago.

It must be noted that the philosophy of parental choice and open enrolment is also deeply enshrined in the 1976 Trinidad and Tobago Republican Constitution. While this Constitution does not explicitly support the right to education, it does acknowledge "the right of parents to provide a school of his own choice for the education of his child or ward" (section 4(f) Trinidad and Tobago Government (2000)). Anthony (1993) noted Justice Lennox Deyalsingh's interpretation of this constitutional clause in a 1989 judgement in the case of *Mohammed et al. v. the Minister of Education and the Attorney General of Trinidad and Tobago*. The Judge reasoned that the section ensured that the "Government's control of education is not absolute," and concluded that the "Government cannot compel a parent to send his child to a public school." He further reasoned that if parents were not satisfied with the education afforded by the Government, they have the right by law to "provide a school of his own choice for his child's education" (p. 28). Thus, paradoxically, the Trinidad and Tobago Constitution allows for private schools that are provided either by parents or institutions. In reality, however, the provision of government-assisted schools in the education market limits the need for extensive private secondary (Belfield &Levin, 2002).

Although the choice mechanism at the eleven-plus might have created a powerful formalized education market in the secondary school sector, this has not always been recognized by schools themselves (Oplatka, 2004). Secondary schools in Trinidad and Tobago are rarely market-oriented

and do little to actively influence stakeholders' perceptions of the institution. Most schools do not have mechanisms to respond to changing environmental demands or expectations. At the same time, successive governments have sought to provide new school types, adding to the variety of schools on the market without concern for the market forces that operate. For example, since 1996, a number of denominational schools have been rebuilt or remodelled. Even today, new government schools are being created, which are different to those in the past. Recent additions include 5-year "high" schools and "magnet" schools; the latter designed to focus on specific areas of schooling. Changing product lines and operational rules of the Trinidad and Tobago secondary education market will likely impact on the way families choose schools.

Choice as Illusion

Despite the role of open enrolment in the eleven-plus, there are no current studies on school choice in Trinidad and Tobago. However, insight into the nature of school choice decision making is readily available from international studies. A focal point has been the factors that influence choices made (Bosetti, 2004; Goldring & Hausman, 1999). These may be grouped into two categories—academic and non-academic. Academic factors relate to the performance of the school or the provision of some specialized academic programmes, as in "magnet schools" in the US. Non-academic factors include school characteristics such as sporting prowess or the availability of non-academic programmes. Since information on school performance is not readily available to families in Trinidad and Tobago, the accuracy of perception might be an important factor. With an information brownout, some schools might be able to retain their status despite declining performance.

The critical question is what happens when families choose schools. If schools vary in quality, parents might make decisions based on some loose ranking of schools. This ranking will be primarily based on perceived school characteristics, with information gathered from hearsay. The value of each characteristic will be strongly related to the decision maker's own human values and will likely vary across families (Yang & Kayaardi,

2004). Even if information was not readily available on schools, as active consumers, some parents will likely seek out information to ensure choices in line with their perception and values. The lack of information about schools in a system will, however, impact most strongly on marginalized customers. In the Trinidad and Tobago choice situation, information about choice patterns that favour preferred placements might also be a critical factor. For example, placing a highly valued but rarely chosen school as second or third choice might enhance placement opportunity.

Although the focus of the consumer is usually on choosing a school because of its appeal, it might also be that the critical process is rejecting schools that are considered worthless (Bagley, Woods, & Glatter, 2001). Consumers may attribute a host of negative or evil qualities to some schools—a process that may be regarded as vilification or demonization (Reay & Lucey, 2000). Choosing a demonized school might be less risky for families when the chance of obtaining a highly valued school is very low. Choosing a demonized school might also be considered risky for families with female candidates. Non-academic factors could be critical when choosing a school. Moreover, the value placed on these factors might depend upon geographic location and time. For example, a commonly cited non-academic factor is location, related to proximity and travelling convenience (Parsons, Chalkley, & Jones, 2000; Theobald, 2005). The importance of location could change with time and context, as road networks expand or the traffic situation gets worse. Some school characteristics may be more important for some consumers. Religion may also be a factor of higher valence in the context of Trinidad and Tobago. For example, middle-class consumers might be more willing to allow their children to access valued schools located at a great distance because of their ability to cope with transportation costs. This means that choice making is a relatively complex and varied activity, not easily amenable to superficial analyses.

The consumer is a central element in the school choice decision-making process. As indicated before, differences in consumers will influence the relative importance of each factor. An important consumer characteristic is likely to be socio-economic status, which provides a useful measure

of social and cultural capital. Social and cultural capital captures, in part, family and community variables such as information, trust, and norms of reciprocity in social networks. Social and cultural capital is useful in explaining why some consumers are marginalized, with little access to information or networks required for decision-making influence (Basu, 2006). Many of these marginalized customers may not be as choosy as customers who are more integrated into the networks and information exchange of the education system. Therefore, they might be more willing to accept new products that appear to have less value than traditional offerings or products which are within community settings.

A system-wide lack of credible information about schools could lead some marginalized customers to make poor decisions, such as choosing only high-valued schools. Some marginalized customers may also be relatively inert, reluctant even to participate in the process. They might be willing to leave the decision making to other more informed participants, such as teachers. Thus, choice-making patterns are not homogenous, but may vary spatially. In the context of Trinidad and Tobago, the geography of choice will be an important factor because there is significant variation in the economic and social conditions across education districts (Taylor, 2001).

Although most international studies suggest that parents are the primary decision makers, in reality, both children and their teachers are likely to be critical participants in Trinidad and Tobago. In this context, the role of the teacher or extended family member may be especially significant with marginalized and inert consumers. It is well known, for example, that teachers often advise students on what schools they should choose. The influence of the extended family might be important when family members live in the same location. Children might have a significant say in the choice of school in many instances, considering the nature of the choice system at eleven-plus. Reay and Lucey (2000) studied the choice-making process among children in the UK and found that their decision-making framework was relatively well developed. In the context of Trinidad and Tobago, however, it is possible that

students' choices might impact even more strongly on family decisions. It is likely that the impact of the students' choices might be greater in some families.

Developing a Framework for Analysing School Choice in Trinidad and Tobago

Based on the nuances related to choosing schools in Trinidad and Tobago identified above, six themes were constructed. These themes relate to different aspects of school choice in Trinidad and Tobago.

1. **The products most highly valued** — This theme relates to the type of schools that were most highly valued.

2. **The emergence of new products** — This theme explored the impact of recently introduced new products on the market, including government high schools and new denominational schools, both from the traditional group and formerly marginalized groups.

3. **The use of additional choices provided from 2001–2005** — This theme relates to the use of choices 5 and 6, which have since been removed.

4. **The relationship between consumer characteristics and product choices** — This theme was captured by both the quantitative and qualitative data collection process

5. **The nature of choice patterns** — This theme focused upon the geography of school choice and the way in which patterns might vary across educational districts.

6. **Choice and markets** — Cultural and social capital are likely to be important determinants of variation in the choice-making process.

For the purposes of this paper, three themes are explored: (1) highly valued choices, (2) the variety of choice patterns, and (3) the complexity of markets and the construction of choice.

Table 1. Themes, Research Questions, and Analyses in the School Choice Study

Themes	Research Questions	Analyses
Highly valued products	What schools are most frequently chosen for first choice over the selected period?	Top 10 Ranking of schools — Numbers choosing schools for first choice (frequency distribution)
	Which of these schools have the greatest variation in frequency of choice over the selected period?	Cross-tabs and count Standard deviation and mean – Also box plots for 10 schools
Choice patterns: The value placed on new schools	Which new schools are increasingly chosen as first choice by the population?	Cross-tabs and count For schools built 1990 and after give count
Choice Patterns: The use of choices 5 & 6	How did parents use their two additional choices received in 2001?	12 most common choices (5th and 6th choice) — schools chosen
The relationship between selected consumer attributes and product choices	What is the relative ranking of factors used to choose schools?	Qualitative text analysis
	Which schools are most frequently chosen for first choice as categorized by religious affiliation, length of schooling period, and date of origin (traditional versus new)?	Cross-tabs and count Groups and how many people choose them (%)
	Is there a relationship between choice patterns, student gender, and religious affiliation?	Religion vs. school Religion cross-tab and stats (quantitative) Qualitative analysis
Variation in choice patterns across education districts	How do choice and Ministry assigned patterns vary across educational districts?	Number of Ministry assigned/first choice received by district
	What was the most common pattern of choices based upon a categorization of secondary schools?	By denominational/governmental – schools chosen by denomination for choices 1, 2, 3, 4
Variation in choice patterns across rich and poor neigbourhoods	What are the common choices across communities of different socio-economic status?	Frequency of schools chosen for first choice across selected communities Qualitative text analysis

Methods and Materials

Rationale for Research Design

A mixed method research design, in which quantitative and qualitative approaches were combined, appeared to be the best design in this context (Tashakkori & Teddlie, 2003). In this mixed method study, both methodologies are used across all phases of the research process. Three reasons are provided for the use of this methodology. Firstly, there were many dimensions to the school choice issue, as identified in the themes. These dimensions suggest that choosing a secondary school may be a relatively complex phenomenon not easily captured by a single method study. Secondly, it is not possible to answer the question of "How do families construct school choice?" by solely using the quantitative data. While many basic research questions can be addressed from the eleven-plus registration database, insight into the thinking of the parents can only be captured through face-to-face interviews.

Thirdly, each data set provides valuable and independent insight into this complex issue. On the one hand, the quantitative data can reveal information about changes in placement patterns across entire cohorts over time. On the other hand, the qualitative data will provide insight into the thought processes that inform the final individual choice patterns across different types of consumers. The need for supplementary qualitative data is also critical in light of the notable deficiencies in the eleven-plus data sets. For example, the database does not allow a measure of important consumer characteristics such as socio-economic status.

A triangulated multilevel mixed method design was chosen with the intention of obtaining different but complementary data on choosing secondary schools at eleven-plus. Cresswell and Plano-Clark (2007) argue that triangulated designs provide a way of understanding a research question by bringing together the strengths and weaknesses of various data collection methods. In the multilevel variant, different methods are used to investigate different parts of the system, but the

results are then merged into an overall interpretation. This design will allow comparison of statistical data with the qualitative findings, as well as validation and expansion of data collected using one method. Following Cresswell and Plano-Clark, to facilitate this concurrent methodology, the large research team was organized into different qualitative and quantitative teams.

Four distinct qualitative methods were chosen: (1) focus group interviews with parents; (2) focus group interviews with students; (3) soft laddering (one-on-one interview with parents); and (4) hard laddering (questionnaires). A laddering interview is defined as an in-depth, one-on-one structured dialogue that draws out the connections people make between product attributes, the consequences, and core human values (Olson & Reynolds, 2001). Laddering is an important technique used in consumer psychology to investigate perceptions and choices. It is especially useful for eliciting hierarchical constructs and personal values (Veludo-de-Oliveira, Ikeda, & Campomar, 2006). It must be noted that although both hard (a structured questionnaire that yields quantitative and "quantitized" data) and soft laddering (interview only) methods were used, a constructivist philosophy remained dominant during this data collection phase. These different qualitative methods were intended to bring together different strengths and overlapping weaknesses (Cresswell & Plano-Clark, 2007).

A feature of the multilevel mixed method design is that different levels of the system can be accessed through the contrasting data collection methods. The levels identified in this study were (a) system, (b) parents, and (c) children. More importantly, the mixed method approach persists through the processes of conceptualization, data collection, and data analysis. A mixed method approach in the data analysis phase requires greater attention to the process of integrating the data (Bryman, 2006, 2007). So rather than have the findings explored separately, an attempt was made to combine results so that they could be mutually illuminating. The overall design of the study is illustrated in Figure 1. As shown, the choice system was studied using the quantitative methodology, whereas choice patterns within families were studied at the level of parents and children using the qualitative approaches.
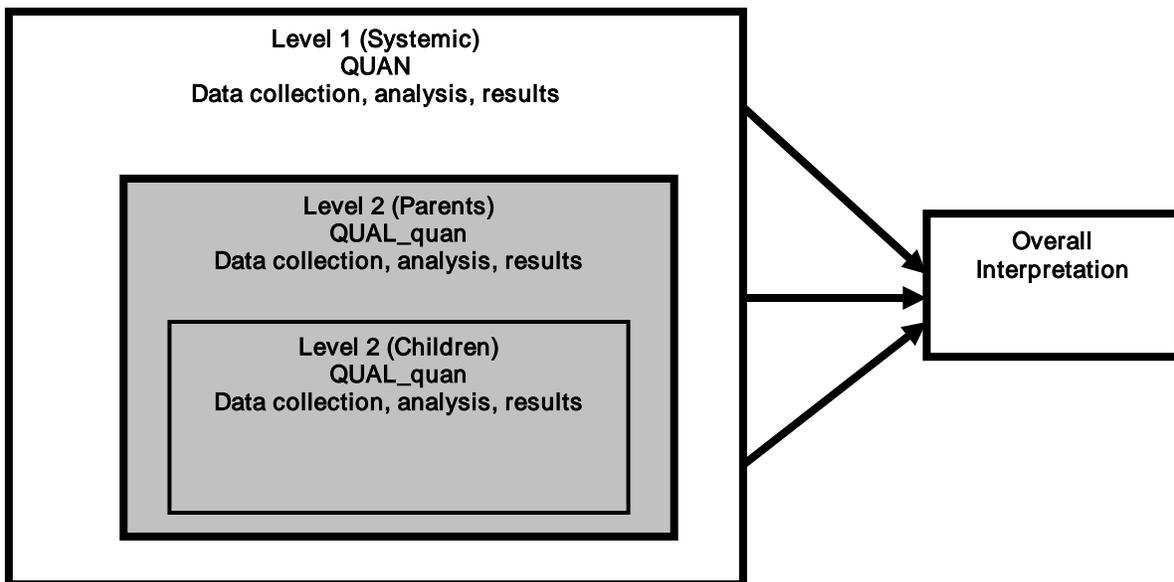
Figure 1. Multilevel triangulated mixed method design used in the study.

Sampling Procedure

Following Teddlie and Yu (2007), a multilevel mixed method sampling plan was employed. This plan used different sampling strategies for each unit of analysis as illustrated in Figure 2. As shown, a census approach was used for the quantitative analysis of data from the 10 cohorts

across the period 1995–2005. This included five years of the Common Entrance Examination (CEE) and five years of the Secondary Entrance Assessment (SEA). Additionally, from 2001, six rather than four choices were offered to parents on the registration form. The original database required significant verification and correction. New data were created from the residential codes, schools, and choices in order to enable answers to additional research questions constructed.

In the case of the qualitative study, to obtain a list of parents, schools were first sampled from each of the eight districts using the criteria of SEA performance, socio-economic status of the pupil roll, and location in the district. A list of 40 schools was obtained, from which three schools in each district were sampled in the initial implementation. At the time of this paper, implementation was still in progress, therefore data from six schools and three districts were reported on. At each school, parents and students were selected by the trainer interviewers, school principals, and Standard 5 teachers. Generally, the students and parents were from different families, since participation by parents was purely voluntary.

This study makes use of focus group data from 26 students and 24 parents in four primary schools (8 focus groups): A middle-income government primary school from the suburban area of west Trinidad; a denominational school in central semi rural/semi urban Trinidad; a middle-income, high-achieving school in the capital city; and one rural government primary school in Tobago. These sites capture families from different economic situations and from contexts.

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┌─────────────────────────────────────────────────┐
│          Systemic Study (1995–2005)             │
│                    Census                        │
└─────────────────────────────────────────────────┘
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                        ▼
┌─────────────────────────────────────────────────┐
│            Study of Parents (2006)              │
│ Purposive for Clusters (Representativeness and   │
│                  Comparability)                  │
│      Convenience for Individuals (Volunteer)     │
└─────────────────────────────────────────────────┘
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                        ▼
┌─────────────────────────────────────────────────┐
│            Study of Children (2006)             │
│ Purposive for Clusters (Representativeness and   │
│                  Comparability)                  │
│       Convenience for Individuals (Captive)      │
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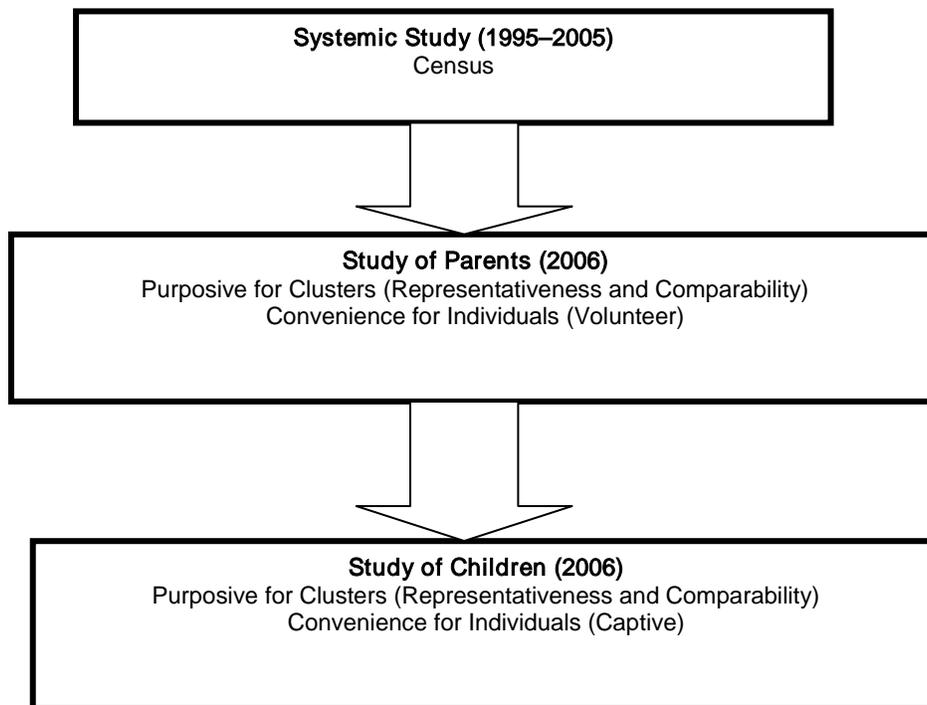
Figure 2. Concurrent mixed method sampling strategy for all phases.

Instrumentation

Semi-structured interview schedules were prepared for both the focus group and laddering interviews. For the focus group interviews with (a) parents and (b) children, initial issues were identified from the literature and questions constructed. These issues were school popularity, demonized schools, alert and inert clients, marginal customers, product attributes, family dynamics of choice, education markets, parent wishes or choices, matching schools with children, academic reputation of schools, single-sex schooling, and rational choice theory—logic,

values, and concerns that drive choice. A final list of questions and probes was obtained after discussion with team members and a formal pilot of the instruments. Sample questions and probes for the parent interview schedule are illustrated in Figure 3.

A number of additional techniques were used to enhance participants' responses in the focus group sessions (Bystedt, Lynn, & Potts, 2003). These included a variety of verbalization techniques used to enhance participant responses to the request: "Please explain your thinking when you made your choices." Verbalization techniques included (a) concept mapping, which was used for questions focusing upon school attributes and

choice, and for the children's interview; and (b) story telling, which was used to identify features of "demonized" and "highly valued" schools. The protocol for the laddering interview was adapted following that of Reynolds and Gutman (2001). The soft laddering and hard laddering (structured questionnaire) was used at the same time. In the procedure, respondents were asked to write down the choices they originally made and to describe the qualities (attributes) of the school. They were then asked to further describe attributes that distinguished between the different schools. After listing the qualities in order, they were asked iteratively why each quality was important focusing first on consequences and then values.

1.	What were your choices for the 2006/7 SEA examinations?		
2.	How did you go about deciding on your choices?		
	Probes		
	a.	Did you involve your children?	
		i.	If so how much did they guide the choice?
	b.	Was your mate [partner, other parent] also involved, to what extent?	
	c.	Was the entire family involved?	
3.	What were some factors that led you to making these choices?		
	Probes		
		- Economic	
		- School availability	
		- Geographical location	
		- Academic performance of school	
		- Coeducational or single-sex nature	
		- Human relationships within the school	
		- Marketing of school	
		- Other factors	

Figure 3. Sample questions from semi-structured interview schedule.

Data Analysis Methods

The database for student registration at eleven-plus over the period 1995–2001 was obtained. The total number of students in the 10-year database was 175,945 (1995–2000) and 103,804 (2001–2005). For the period 1995–2000, there were four choices for each student and six choices for the period 2001–2005. The database was recoded for area of residence, and each school choice was identified as first, second, third, and so on. The database was then verified and validated. Descriptive data were collected for the schools chosen in the fourth to sixth registered choices. The correlation coefficients describing the relationship between

the parent's religion and school choices were also obtained. The statistical analysis employed for each research question in the quantitative phase is further detailed in Table 1. Each analysis was done separately for males and females since gender is a factor influencing choice patterns. For the qualitative data, the coding process was done by five independent readers. Themes and sub-themes were identified, and tables and narratives generated based on inter-rater agreement. Data from the laddering interview were included in this analysis. However, data from the hard laddering exercise (questionnaires) were not used in this study.

Results

1. Which Schools are Most Highly Valued?

To answer this question, data were analysed separately for the CEE (1995–2000) and the SEA (2001–2005). The key indicators of value were the numbers choosing a particular school for first choice. As explained earlier, the data were disaggregated by gender because many highly valued schools are single-sex institutions. Table 2 shows the ranking of the 10 most highly valued schools as measured by the number of times the school is chosen as first choice. For both periods, the list only contains traditional schools (built prior to the 1960s). Interestingly, the most-valued school appears to be Queen's Royal College, a government institution. The other nine schools are denominational—five Catholic, one Presbyterian, and one Anglican. There are two mixed schools in the top 10 (St. Stephen's and North Eastern Colleges) for the period 1995–2000, but only the former appears for the period 2001–2005.

As shown in Table 3, traditional schools also dominate the rankings for females across both periods. However, Lakshmi Hindu College is ranked as number nine in both time periods. The change of rankings for the two time periods suggests a relative decline in the value of some traditional schools, like Bishop's Antsey. However, St. Augustine Girls and Naparima were able to improve their rankings. Significantly, for the period 2001–2005, Bishop Anstey East, a new school to the market, was able to enter the top 10 rankings. There is only one mixed school in the top 10 most highly valued schools for girls. This was North Eastern College for the period 1995–2000; however, the school did not maintain its position in 2001–2005.

Table 2. Percentage of Parents With Male Students Naming School as First Choice Nationally

------------------------------ CEE (1995–2000) ------------------------------------					
Schools Chosen by Males in the CEE	% of Students Choosing School Each Year				
(Ranked by Total No. Choosing)	1995	1996	1997	1998	1999	2000
1) Queen's Royal College	5.8	6.2	6.8	7.5	6.2	5.9
2) Hillview College, Tunapuna	4.4	5.1	4.9	4.8	4.4	4.2
3) Presentation College, Chaguanas	5.0	5.0	4.9	4.2	3.9	3.4
4) St. Mary's College	4.6	5.2	4.3	3.7	3.5	3.8
5) Naparima College	4.2	4.3	3.8	3.6	3.5	3.4
6) Fatima College	4.5	4.2	3.6	3.5	3.4	3.2
7) North Eastern College, Sangre Grande	3.8	3.4	3.8	3.6	3.9	3.6
8) Presentation College, San Fernando	4.7	4.0	4.0	3.4	2.9	2.8
9) St. Stephen's College, Princes Town	4.1	3.6	3.4	3.1	3.2	2.7
10) Holy Cross College, Arima	3.2	2.6	3.0	3.8	3.3	2.8
------------------------------- SEA (2001–2005) ------------------------------------					
Schools Chosen by Males in the SEA	% of Students Choosing School Each Year				
(Ranked by Total No. Choosing)	2001	2002	2003	2004	2005	
1) Queen's Royal College	6.6	6.2	7.1	7.4	7.2	
2) Presentation College, Chaguanas	5.4	6.0	6.4	7.0	6.6	
3) Hillview College, Tunapuna	5.2	5.3	6.2	6.7	6.1	
4) Presentation College, San Fernando	4.9	5.6	5.4	5.2	4.9	
5) Naparima College	4.4	4.3	5.1	5.5	6.0	
6) St. Mary's College	5.1	5.4	4.8	4.5	4.6	
7) Fatima College	3.8	4.0	4.0	4.3	4.7	
8) Holy Cross College, Arima	3.8	3.2	2.9	2.9	3.1	
9) St. Stephen's College, Princes Town	3.2	3.3	3.3	3.1	2.9	

Table 3. Percentage of Parents With Female Students Naming School as First Choice Nationally

Schools Chosen by Females (Ranked by Total)	% of Students Choosing School Each Year					
------ CEE (1995–2000) ------	1995	1996	1997	1998	1999	2000
1) Bishop Anstey High	5.2	5.3	5.3	5.6	5.3	4.9
2) Naparima Girls High School	6.1	5.9	5.3	5.5	4.5	4.1
3) St. Joseph's Convent, St. Joseph's	5.0	4.9	5.7	5.0	4.6	4.4
4) St. Augustine Girls High School	5.2	5.4	5.0	5.0	4.4	4.5
5) Holy Faith Convent, Couva	5.3	5.6	5.0	4.3	4.1	3.8
6) North Eastern College, Sangre Grande	4.3	3.6	3.6	4.1	4.4	4.2
7) St. Joseph's Convent, POS	4.2	4.0	4.2	3.9	3.5	3.3
8) St. Stephen's College, Princes Town	4.5	4.3	3.5	3.3	3.4	3.1
9) Lakshmi Hindu Girls College	2.6	3.6	3.3	3.3	3.2	3.2
10) Holy Name Convent, POS	3.0	3.3	3.3	3.2	3.0	2.9

Schools Chosen by Females (Ranked by Total)	% of Students Choosing School Each Year				
------ SEA (2001–2005) ------	2001	2002	2003	2004	2005
1) St. Augustine Girls High School	7.1	7.5	8.4	9.6	8.7
2) Naparima Girls High School	6.4	7.4	7.6	8.2	7.8
3) Bishop Anstey High	5.6	6.2	5.4	5.5	5.8
4) St. Joseph's Convent, St. Joseph	5.3	5.4	5.0	5.9	6.1
5) Holy Faith Convent, Couva	5.2	5.9	5.8	5.1	5.4
6) St. Joseph's Convent, POS	4.4	4.7	4.5	5.3	4.9
7) Holy Name Convent, POS	3.3	3.9	3.9	3.6	3.6
8) St. Joseph's Convent, San Fernando	3.7	3.4	3.8	3.5	3.6
9) Lakshmi Hindu Girls College	3.5	3.3	3.3	3.8	3.4
10) Bishop Anstey East	1.0	4.1	4.1	4.1	3.9

2. Choice Patterns

Table 4 provides the pattern of choices for the two designated periods based on (a) the schools' management authority, (b) the period when built, and (c) the number of years of schooling offered. The data were collected only for first choice decision, the most desired outcome. As shown, in terms of the entire population, government schools were most commonly chosen in both time periods followed by Catholic schools. The relative number choosing denominational schools appeared to increase in the 2001–2005 time period. For females, only 31.3% of the population chose a government school, implying that close to 70% of the families chose a denominational school for their female child. The small numbers choosing Hindu and Muslim schools reflect the low numbers of schools for these denominations. However, with the building of new ASJA and Hindu secondary schools during this period, the numbers choosing have increased in the 2001–2005 period.

The new SEMP high schools may be perceived as a better-quality, more highly valued product, offering 5- to 7-year schooling instead of the 2 to 4 years offered in the junior secondary/senior comprehensive system (built 1971–1990). The data show that while some families rejected the new sector schools built in 1971–1990, they were willing to accept the schools built after 1991. However, the great majority of students preferred the traditional schools, and the relative numbers choosing this type of school increased notably from between 39% in the period 1995–2000 and 47% in the period 2001–2005. "Years of schooling" remained an important characteristic, with the traditional school likely to offer secondary education up to 18+. The data show that in the period 2001–2005, more than 60% of the families chose a 7-year school for the male and female children.

Table 5 provides the 10 top-ranked schools chosen and the number of families choosing. As shown for males, the most frequent option was no choice. This suggests that many families did not see these additional options as necessary. For families that did choose, however, they were likely to select a new sector or traditional school that provided a 5- or 7-year education. A number of government schools built in the 1960s were included in the ranking. These include Tunapuna Government, San Fernando Government, Woodbrook Government, and St. James Government Secondary. Families also selected some of the more highly valued new sector 3-year schools such as Curepe, Chaguanas, Couva, San Fernando East, and Five Rivers Junior Secondary schools. The pattern of choices for the females was very similar to that of males. Again, for choice number six, the most common option was not to choose a school. Both El Dorado schools were highly ranked in the fifth and sixth choice list.

Table 4. Choice Patterns for Denomination, Time Period, and Type of Schooling Offered

----------------------- *Traditional vs Newer Schools* ------------------------				
(1) Management Authority of School	% Choosing Schools for First Choice			
	1995–2000		2001–2005	
	Male	Female	Male	Female
Government	53.2	44.0	42.4	31.3
Catholic	24.6	23.7	29.2	27.5
Presbyterian	10.4	11.7	12.6	17.0
Anglican	6.7	11.9	7.3	12.6
Hindu	-	3.2	1.4	4.3
Muslim	2.5	2.8	3.6	4.1

----------------------- *Traditional vs Newer Schools* ------------------------				
(2) Period When Built	% Choosing Schools for First Choice			
	1995–2000		2001–2005	
	Male	Female	Male	Female
Before 1950	39.2	37.4	47.0	47.4
1950–1970	33.6	36.7	27.7	29.3
1971–1990	18.8	18.2	9.3	9.4
After 1991	5.4	4.5	12.3	10.6

-------------------- *Choice Pattern by Time of Schooling Provided* ----------------------				
(3) Years of Schooling	% Choosing Schools for First Choice			
	1995–2000		2001–2005	
	Male	Female	Male	Female
Less than 5 years	10.7	8.0	2.9	4.6
5-year schools	17.5	20.4	13.4	15.4
7-year schools	55.9	57.3	67.8	61.8

3. The Complexity of Choice: Markets, Consumer Attributes, and Products

In reality, the choice process is much more complex than captured in the first two themes. It is likely that choice patterns vary across education district and markets. Data addressing this issue were gathered using both quantitative and qualitative methodologies.

The quantitative study. Tables 6 and 7 provide the ranked listing of schools chosen for males and females over the period 1995–2005. The main pattern suggests that there are separate markets (circuits of schooling) in the North, South, South-East, and East of the country (Ball, Bowe & Gewirtz, 1995). For example St. Stephen's is attractive for many families in the South Eastern District while Naparima College in the city of San Fernando is relatively less attractive. Therefore, all traditional schools do not compete against others.

Instead, schools compete with other schools within the specific circuit or market, usually bounded by accessible education districts. That pattern, however, is quite different for males and females.

For example, although some families in the South Eastern district were reluctant to choose St. Stephen's College for their daughters, they were willing to select the same school for their sons.

Table 5. List of Top Ten Schools Chosen for Choices 5 and 6 for Males and Females (1995–2005)

Fifth Place Choice	No.	Sixth Place Choice	No.
-------------------------- Males --------------------------------			
NONE	1,763	NONE	3,058
El Dorado Sec. School (M)	1,588	Curepe Jr. Sec. School (M)	2,140
Tunapuna Government Sec. (M)	1,504	El Dorado Sec. School (M)	1,541
San Fernando Sec. School (M)	1,491	Woodbrook Government Sec. (M)	1,297
Woodbrook Government Sec. (M)	1,403	Chaguanas Jr. Sec. School (M)	1,264
St. James Sec. (M)	1,370	Couva Jr. Sec. School (M)	1,191
El Dorado Sec. Comprehensive School (M)	1,322	St. James Sec. (M)	1,169
Curepe Jr. Sec. School (M)	1,200	San Fernando East Jr. Sec. School (M)	1,168
Tranquility Government Sec. (M)	1,106	Five Rivers Jr. Sec. School (M)	1,100
San Fernando Sec. Comprehensive (M)	957	Carapichaima Jr. Sec. School (M)	1,085
-------------------------- Females --------------------------------			
El Dorado Sec. School (M)	1,698	NONE	3,008
NONE	1,691	Curepe Jr. Sec. School (M)	2,062
Tunapuna Government Sec. (M)	1,672	El Dorado Sec. School (M)	1,678
Woodbrook Government Sec. (M)	1,575	Woodbrook Government Sec. (M)	1,463
San Fernando Sec. School (M)	1,429	St. James Sec. (M)	1,363
El Dorado Sec. Comprehensive School (M)	1,421	Chaguanas Jr. Sec. School (M)	1,230
St. James Sec. (M)	1,370	Tunapuna Government Sec. (M)	1,223
Tranquility Government Sec. (M)	1,023	Couva Jr. Sec. School (M)	1,196
Arima Sec. School (M)	1,021	San Fernando East Jr. Sec. School (M)	1,176
Curepe Jr. Sec. School (M)	1,008	Princes Town Jr. Sec. School (M)	1,076

The percentage of the population choosing the schools across the seven education districts in Trinidad was also provided. As shown in Table 6, some schools attracted significant numbers of children from families located across different education districts. Examples are St. Mary's College and Queen's Royal College, which were the older traditional major boys' secondary schools. While more than 60% of the students choosing these schools as first choice were from Port of Spain and Environs, significant numbers in three other education districts (Caroni, North

Eastern, and St. George East) were also choosing these schools.

No school, however, attracted children from more than four education districts. Some schools had a more restricted market, exacting a "pull" on less than three districts overall and primarily for students from one major district. Examples include Presentation College, Chaguanas, and Holy Cross, Arima. A degree of dynamism was apparent in the market, with some schools attracting clientele from a broader range of markets in 2001–2005 compared with 1995–2000. For example, in the case of Fatima College, there was a slight increase

in the number of students coming from Caroni and some students from the North Eastern District were also putting this school as first choice.

As shown in Table 7, the situation with the traditional Port of Spain girls' schools was quite different. For example, more than 80% of the students indicating Holy Name as their first choice came from Port of Spain and Environs, whereas, for Bishops' Anstey High School, which is metres away, this figure was only 62%–75%, with close to 20% of these first choices coming from families living in St. George East. This suggests that although these two schools are located in the same area, they compete only partially. Some girls' schools like Naparima and St. Augustine attracted significant numbers of students from four educational districts spanning quite a broad area.

Table 8 provides the collated data for the entire 10-year period based on the stated religion of the family and the school of choice. The table addresses the issue of the "attractiveness'' of denominational schools for the different religious groups. As shown, the families of groups that tend to choose the government schools as first choice in high numbers are from the relatively small, non-mainstreamed denominations such as the Baptists (55.7 % males, 47.2% females); Orisha (60.0% males, 47.6% females); Jehovah's Witnesses (52.8 males, 38.7% females); and Seventh-day Adventists (46.45 males, 38.55 females). In all cases, the groups were more willing to take risks with males compared with females. This might be due to the existence of high-achieving government schools for males, but this alone would not explain the numbers. In terms of the percentage, Pentecostals (Evangelical Christians) are an increasingly large denominational group, but families professing such faiths seemed more reluctant to choose Presbyterian (12.0% males, 17.9% females) than Catholic schools (27.1% males, 24.3% females) for first choice.

Presbyterians (18.4% males, 11.6 females) and Muslims (27.4% males, 17.3% females) were most reluctant to choose government schools for first choice. Presbyterians were more likely than other groups to choose private schooling for their daughters (18.6%) in the event they did not get a school of their own choice. Interestingly, although Hindus rejected the government schools for their daughters, many were willing to accept the government schools for their sons (33.3% males,

17.2% females). Presbyterians (48.8% males, 61.1% females) and Catholics (43.3% males, 44.5% females) were most likely to put their own schools as first choice. Clearly, among both groups, Presbyterians were more likely to choose a school of their own denomination for their female child. The relatively low figure for Catholics is interesting considering that the large majority of high-achieving girls' schools are Catholic. Anglicans were often not attracted to their own schools (11.0% males, 26.3% females) and favoured the government schools, even though a number of high-achieving schools were also Anglican, including three in the top 10: St Stephen's College, Bishop's Anstey East, and Bishop's Anstey High School.

The qualitative study. Analysis of the text data identified 11 independent issues. These issues were further categorized into three groups: (a) the school chosen, (b) the family and student choosing, and (c) the societal milieu. In terms of the school, parents were most often concerned with (1) security, (2) public image, (3) single-gender schooling, (4) location, and (5) the management authority of the school. For the family category, parents expressed concern over (6) their aspirations and desires; (7) family, cultural, and generational traditions; (8) the student's own intellectual capability, perceived merit, or career potential; and (9) specific family dynamics and localized community experiences. Parents were also concerned over the wider social issues related to the process, such as (10) mistrust of the placement process and (11) pervasive lack of system fairness.

The focus group interviews with parents showed an overwhelming tendency for families to choose high-achieving 7-year denominational schools located in the urban areas. In some cases where a government school was included in the choice list, it might be added as a third or fourth choice school and often on the advice of a teacher. According to the focus group interview data with the parents, teachers often assumed an advisory role in the choice process, balancing the school selected with the perceived ability of the child. This is illustrated in the following conversation with a Muslim female parent, who talked about the role of the teacher in choosing schools for her child.

Yes, I guess they really looked at their marks and how they performed to know [what choice to make]. As I said the teacher checked for the marks, and he advised every one of us, that this is a school way above your child's [ability]. We recommend [instead] this one; she has a quicker chance of getting into such and such [a school].

So this is where we were being guided along as well by the teacher. This is the scenario: the teacher and me. I am talking to my husband and I am telling him exactly what is being said so it is a joint thing with the teacher and the parents.

I am concerned about his marks and what the teacher said. I went to school there and the teacher gave me advice about the school I choose. That is [my child's] level and that is the reason why I didn't choose any junior secondary school.

Table 6. Top Ten Schools Chosen by Males Across Specific Educational Districts

------------------ *Common Entrance Examination (1995–2000)* -----------------------

Schools Chosen by Males (1995–2000)	% Choosing as First Choice by District						
	Caroni	North Eastern	POS & Environs	St. George East	St. Patrick	South Eastern	Victoria
1) Queen's Royal College	7.4	2.5	61.7	28.0			
2) Hillview College, Tunapuna	11.9	7.5	2.1	78.4			
3) Presentation College, Chaguanas	90.7			4.6			2.9
4) St. Mary's College	8.1	2.6	57.7	31.0			
5) Naparima College	5.1				20.6	10.1	64.1
6) Fatima College	3.5		75.8	19.6			
7) North Eastern College, Sangre Grande		76.0		16.4		7.1	
8) Presentation College, San Fernando	6.1				21.5	8.7	63.4
9) St. Stephen's College, Princes Town						77.7	21.6
10) Holy Cross College, Arima	1.4	16.2		80.6			

------------------ *Secondary Entrance Assessment (2001–2005*) -----------------------

Schools Chosen by Males (2001–2005)	% Choosing as First Choice by District						
	Caroni	North Eastern	POS & Environs	St. George East	St. Patrick	South Eastern	Victoria
1) Queen's Royal College	6.0	3.8	61.3	28.2			
2) Presentation College, Chaguanas	88.9		1.0	7.4			2.6
3) Hillview College, Tunapuna	10.4	12.1	2.2	74.9			
4) Presentation College, San Fernando	5.0				20.1	9.6	64.8
5) Naparima College					23.4	12.0	59.6
6) St. Mary's College	5.4	4.0	60.6	29.4			
7) Fatima College	4.0	1.5	73.0	20.7			
8) Holy Cross College, Arima	1.9	26.5	1.4	69.5			
9) St. Stephen's College, Princes Town						78.8	19.8
10) North Eastern College, Sangre Grande		76.0		13.4		10.1	

Table 7. Top Ten Schools Chosen by Females Across Specific Educational Districts

------------------- *Common Entrance Examination (1995–2000)* -----------------------

Schools Chosen by Females (1995–2000)	Caroni	North Eastern	POS & Environs	St. George East	St. Patrick	South Eastern	Victoria
1) Bishop Anstey High	4.4	1.2	72.9	21.0			
2) Naparima Girls High School	5.7				18.7	11.9	63.3
3) St. Joseph's Convent, St. Joseph	8.5	5.7	3.3	82.0			
4) St. Augustine Girls High School	28.0	11.6	4.0	55.7			
5) Holy Faith Convent, Couva	85.6						13.1
6) North Eastern College, Sangre Grande		75.2		17.1		7.4	
7) St. Joseph's Convent, POS	6.5	3.4	74.8	14.9			
8) St. Stephen's College, Princes Town							
9) Lakshmi Hindu Girls College	33.0	5.6		60.7			
10) Holy Name Convent, POS	3.3		80.9	13.7			

------------------- *Secondary Entrance Assessment (2001–2005)* -----------------------

Schools Chosen by Females (2001–2005)	Caroni	North Eastern	POS & Environs	St. George East	St. Patrick	South Eastern	Victoria
1) St. Augustine Girls High School	27.3	11.4	4.0	56.5			
2) Naparima Girls High School	4.9				22.5	13.9	58.2
3) Bishop Anstey High	3.3	2.2	75.8	18.2			
4) St. Joseph's Convent, St. Joseph	8.3	8.5	3.9	48.9			
5) Holy Faith Convent, Couva	3.2	2.1	81.1	13.2			
6) St. Joseph's Convent, POS	3.9	3.0	80.0	12.9			
7) Holy Name Convent, POS	3.2	2.1	81.1	13.2			
8) St. Joseph's Convent, San Fernando	2.2				25.6	10.4	61.3
9) Lakshmi Hindu Girls College	29.4	12.3	0.6	57.5			
10) Bishop Anstey East	3.1	8.0	6.2	82.3			

Thus the decision-making process usually involved many parties, but a critical finding in this study was that students were never just inert onlookers and were often active participants in the decision-making process. While in some cases their role could be dominant, more often than not there was a process of negotiation and compromise with adults. In many instances, too, children were keenly sensitive to the family's capability and need and were therefore willing to make choices to accommodate these. This might mean accepting choices that were less than favourable. For example, although a prestige school might be highly valued, the cost of transportation or the difficulty in accessing the location may make it difficult for parents to support the choice financially. In such instances, students were often willing to make accommodations.

This ability of children to influence the choice process was often related to their emerging role as power-brokering adolescents. As one student from an urban government school confidently said *"Well I sitting the exam so I put my two choices first, she [her mother] put her two choices last, since she had to write the list."* Still, there was often continued ambivalence and dependence upon the adults involved in the process. Thus, it was customary to give greater weight to the voice of parents, teachers, and even members of the extended family. However, it was not always possible to weigh the role of each participant exactly, and in some situations, children could have a significant and final say. One female student from a high-achieving primary school in

the suburbs described her role in the choice-making process:

Well, I was really planning a long time to go St. Augustine[Girl's High School], I just had my mind set on that [school] because plenty people told me that to try for St. Joseph and not to go for St. Augustine Girls High school. Even my teacher recommended [that] I go for St. Joseph but I am still trying for St. Augustine Girls High school [Interviewer: Did you choose St. Augustine Girls High School against your teacher's advice?] No, he told us that he was just recommending those, that they are just schools he recommended and that the parents could make other choices, but I did put in the other two choices (Student in focus group).

Table 8. Management Authority of Schools Chosen by Candidates' Denominations

Religion of School	---------------------------- Males-------------------------------									
	Religion of Candidates (1995–2005)									
	Anglican	Baptist	Hindu	Islam	Roman Catholic	Presby-terian	Seventh-day Adventist	Jehovah's Witnesses	Pentec-ostal	Orisha
Anglican	11.0	10.3	6.4	5.3	4.9	5.8	11.3	7.9	7.3	7.5
Baptist	0.4	7.3	1.2	1.1	0.6	1.2	1.5	1.1	1.2	1.3
Catholic	27.1	18.9	24.7	26.7	41.6	19.9	17.5	22.5	27.1	27.5
Government	51.8	55.7	33.3	27.4	43.0	18.4	46.4	52.8	46.5	60.0
Hindu	0.0	0.2	5.6	0.7	0.3	0.6	0.1	0.3	0.6	1.3
Islam	1.6	1.4	6.9	19.7	0.9	4.5	0.9	1.5	2.8	0.0
Pentecostal	0.3	0.2	0.1	0.0	0.1	0.4	0.0	0.1	1.0	0.0
Presbyterian	6.7	4.2	21.3	18.9	7.4	48.8	7.1	12.1	12.0	2.5
Private	0.3	0.5	0.1	0.0	0.6	0.1	9.9	0.7	0.5	0.0
Religion of School	------------------ Females ----------------------------									
	Religion of Candidates (1995–2005)									
	Anglican	Baptist	Hindu	Islam	Roman Catholic	Presby-terian	Seventh-day Adventist	Jehovah's Witnesses	Pentec-ostal	Orisha
Anglican	26.3	16.1	6.5	7.3	9.8	4.8	18.6	15.7	14.8	14.3
Baptist	0.7	7.5	1.0	1.0	0.6	0.7	1.6	1.7	1.1	2.4
Catholic	21.8	16.7	21.4	19.7	44.5	13.3	14.5	23.0	24.3	25.0
Government	37.7	47.2	22.7	17.3	31.4	11.6	38.5	38.7	34.7	47.6
Hindu	0.7	0.6	17.2	3.7	1.2	2.8	0.6	0.9	1.3	0.0
Islam	1.6	2.4	6.4	21.3	1.6	5.5	1.5	1.9	3.8	1.2
Pentecostal	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.7	0.0
Presbyterian	9.9	7.9	24.6	29.2	9.7	61.1	10.9	17.2	17.9	8.3
Private	0.3	0.5	0.0	0.0	0.3	18.6	8.5	0.4	0.3	0.0

In another illustrative anecdote, a female parent from central Trinidad described how she worked along with her child in coming to the final list of choices:

Parent: I liked the history and discipline of the school, the reputation of the school, the track record, [it was] good for discipline, which no one else [in the focus group] really said but is that a factor for everybody else. Yes, not only academic reputation but discipline.

Interviewer: When you were making these choices did your child get involve and what was the level of this involvement?

Parent: Well I had to change some of my choices because I wanted her to be happy with the choices. I wanted her to be involved. She gave me a list of schools and I chose some and I chose the ones I think are the best.

Interviewer: So she gave you her preferred list and how many schools?

Parent: It was six schools. You chose four out of there and I even talked her out of one I chose and she didn't like.

In the Tobago school, families were more willing to invest in a new sector school located in their community. Surprisingly, however, not all the parents used their full four choices. This could be related to the lack of variety in the Tobago market or a different perspective on education and its purpose. One male Tobagonian parent reflects on why he was willing to choose a rural secondary

school ahead of a higher-achieving urban institution:

I live in Speyside and I actually see what takes place in the school. From my point of view . . . I would have chosen Speyside High School for my daughter so she will have more time for herself and she would study more and learn to finish all her school work. But if I have to put a school like Scarborough, it would be very hard for her because she would have to get up 4 o'clock in the morning and she would not have time to do her homework and time for herself; that is why I chose Speyside High School. There are computers [there], and I bought one for her. She likes sports, they go and run. That is why I put Speyside as her first choice.

The decision-making process was fuelled by the dual process of valorizing and demonizing schools. This tendency to paint pictures of schools as either heroic or villainous dramatically increased the emotional content of decision making, and raised the stakes and risks involved in making poor decisions. The dual and interlocked processes of valorization and demonization were based on strongly held perceptions of schools and information obtained from teachers, family members, and friends. For example, two female students of a high-achieving primary school in the suburbs of Port of Spain spoke about their impression of schools chosen:

Student No. 1 (African Trinidadian female): I want to pass for Bishop Anstey High School. Why? Because it is a very good school, the children are very educated and they come out to be very good people, some people turn out to be doctors and other good stuff like my teacher Miss Wright who is a very good teacher.

Student No. 2 (Indian Trinidadian female): I picked Holy Name Convent because my sister went there and she told me that they are a lot of nice people there and teachers really try to [help you succeed].

While valorization and demonization worked together as a dual process, painting the school as a villain was the dominant process in many instances of decision making, with students and parents simply excluding schools they considered

violent and corrupting. It appeared that families believed that these institutions could change the character of their children. The following excerpt from the focus group at the same high-achieving urban Port of Spain school reveals the prominent role of demonizing schools:

Student No. 3 (African Trinidadian female): I don't want to go D.M. because it have plenty real nastiness going on and in CC. I don't find the principal is all that pleasant because my aunty used to go to that school and she was sick and my mother went to give her a excuse for my aunty and she say [bad things]. I don't want to pass for WS either, because I hear a lot of bad things about it and I just don't like the uniform. I don't want to pass for a Junior Secondary [school] because I would get so much licks and because they might beat me up because I done already kind of shy and kind of mad and they does take advantage of people [like that]. So I don't want to be [taken] advantage of. I done already shy, I don't know how to fight because I didn't grow up in that kind of way.

Student No. 2 (Indian Trinidadian female): I just don't want to go to a junior secondary school at all. There is a lot of bacchanal there. All the teachers are nice but I don't want to deal with these children in school and a lot of fighting everyday.

It appeared that decisions did not have the same valence for males and females, so that while families were sometimes willing to allow males to travel a great distance to the school of their choice, they were always very reluctant to allow the same for females. For adults, the most important decision makers in many cases were mothers, although grandmothers, aunts, and sisters might be involved. While fathers appeared absent from this sample, they were often in the background setting the parameters for the final decision.

The relative importance of the child's involvement depended on the dynamics of each family. Where children's voice was dominant, they were at the centre of the decision-making process, often "informing" the parent of their preferences, with the parent acceding to the child's wishes; but in other cases, the child had a say within the parameters set by the parents. Whether

child or adult, consumers did not have equal sophistication in choice making, and in a culture where information was not readily available, awareness, autonomy, and self-assuredness became critical factors. Students in the Port of Spain areas where there were many schools seemed to have a more elaborated decision-making framework, having reviewed the schools that appeared attractive or unattractive.

The laddering interviews and the focus groups were concentrated on the values that led to the different decisions. Schools appeared to be repositories for many deep-seated fears, fantasies, and dreams. Moreover, the process of moving towards a secondary school in itself created anxiety, moral panic, and trepidation. This meant that the families had a strong emotional response to the process and they viewed the opportunity to choose in terms of ownership and power over their destinies. Indeed, some parents believed that much had already been taken away from them and there was a need now to ready the child for a future of turbulence.

The ideal product was a school that was efficient in building academic, emotional, and social competence; was at a safe distance from home; and in which discipline and order prevailed. One parent from central Trinidad spoke at length about her choice of school for her son. As she does so, she balances multiple factors, including location, nature of the school, intergenerational issues, and issues regarding the prestige of the school:

Interviewer: Why did you choose those schools?

Parent: [I chose] Hillview, because of location.

Interviewer: So where do you live?

Parent: I live in El Socorro and my [other] daughter attends St. Augustine Girls so it will be the same direction plus because of the reputation of the school. We chose St. Mary's because his father is [went to that school]. I don't really want him going into Port of Spain but we still chose what was considered the top school [in the country] and St. Georges is also in our area. It is the last choice because I really don't want him going to a co-ed school. I really prefer him in an all-boys' school, but as I said those are all the top schools. In my book those are the schools that are doing well.

Families expected that the school would:

1. provide their children with access to the subjects they need to pursue their career and their lives;

2. help their children become the persons the parents envisioned they could be;

3. help their children develop and grow without fear of becoming tainted or hurt;

4. help their children to reach psychological maturity free of fear.

One parent rationalized her reasons for placing the same local school in central four times on her list of choices:

It is easy for me here; it is easy access for me. It is easier for me because I don't have to pay transportation. It is a financial thing as well as a system thing. As well as you said familiarity with the environment.

Parents in the focus groups understood the problems they faced in judging the prestige of the school and the risks involved in sending their children to schools that were rejected or demonized. In Central Trinidad, for example, parents admitted that some of the new sector schools did not have a bad reputation, yet they were concerned with being left with the choice of having to purchase space at a private school if the situation turned out badly. Thus, one parent reflected on the apparent inequity created by competing schools:

So how is a decision going to be made? Even with a credit system, how would a decision be made about who goes to Presentation and who goes to a [junior secondary school]? It should not have prestige schools and lower ranked schools, it should just be schools and [we] don't label the schools. That is where you don't have that happening abroad.

The complexity of the choice system created many anomalies and these were closely observed by parents and children. These anomalies were often used as evidence of unfairness. Students at a high-achieving urban primary school discussed stories that supported their view that there was graft in the process of choice/school selection:

My cousin's friend had all his choices as colleges and he got in the 80s and he passed for a junior secondary school. I know some of my friends [who] scored 86 and 83, 80 in Creative Writing and still passed for San Juan Secondary when they were suppose to go a Convent or College.

When we did S.E.A, he made 86 and 87 in grammar and he was placed in Diego Martin Secondary. In [school named] here, some boys they does get less marks than other boys and the other boys who get more marks. My cousin too scored in the 80s misses and he was placed in a Junior Secondary school because of where he lived.

While there were valid reasons for each outcome, it was clear that even the students knew that the choice process was limited and considered their being placed by the Ministry as the non-preferred unfair option.

4. Choices and Placement Outcomes

Table 9 provides data on the number and percentages of students in the eight education districts who received one or other of their different choices. The table emphasizes that, in the end, choices are simply wishes. Therefore, in the Trinidad and Tobago system, greater choice opportunities may not lead to the desired outcomes because students still have to compete for available spaces in the valued school. As shown, despite the increased number of schools built to accommodate universal secondary education, less than 20% of the students in most education divisions in Trinidad received their first choice school. In Tobago, with a relatively small population, the situation is quite different, with close to 50% of the children receiving their first choice in the period 2001–2005.

Comparing the two periods (1995–2000 and 2001–2005), it was apparent that although the situation had improved in Port of Spain and Environs and St. George East in terms of the number of students obtaining their first choice school, there were still notable deficiencies in the period 2001–2005. As shown, fewer students received choices 2 to 6 in these education districts. The impact of this finding is significant because these divisions have the greatest number of

eligible students in the eleven-plus. As a consequence, 30.1% of the students in Port of Spain and Environs and 24.7% in St. George East were placed by the Ministry of Education, even with six available choices. The lowest number of students assigned to schools outside the choice list was found in the South Eastern Education Division.

Discussion

This study explored the issue of family choice of secondary school in the education system of Trinidad and Tobago using a mixed method approach. The system was investigated using a quantitative descriptive study within a database of 279,749 individual family decisions over a period of 10 years across two different administrations of the eleven-plus examination (176,002 family decisions for 1995–2000 and 103,902 decisions for the period 2001–2005). This amounted to a total of 1,327,420 choices analysed for the secondary schools (704,008 for 1995–2000 and 623,412 choices for 2001–2005). During the period 2006–2007, a small-scale qualitative study was conducted among parents and children using three schools in Trinidad and one school in Tobago. The qualitative study of family decision making was designed to illuminate, elaborate, and validate key issues identified at the system-level quantitative study. This discussion section seeks to integrate findings from both data sources.

As compared to the international literature, there were some significant differences in the operation of the choice system in Trinidad and Tobago. Trinidad and Tobago operates a unique education market in which there is competition between government schools and schools that are government assisted. Government-assisted schools in the secondary sector are older and many are more highly valued than the newly built government schools. The government-assisted schools are run by the various religious denominations, which makes religion an important element in the choice-making process. The systematic open enrolment system operates at the transition to secondary schools and is a formalized component of the selection and placement system at eleven-plus. There are no restrictions as to the choice so that, in theory, a student in the furthest part of the island can gain access to a highly

valued school in the urban areas. In reality, there were specific markets or circuits of schooling created by the accessibility of highly valued schools to students from all areas.

Table 9. Percentages of the Candidates Receiving Each Choice Across the Educational Districts

All Administrative Districts	--------------------------------- 1995–2000 CEE Choices ---------------------------------							
	Percentages Receiving Each Choice								
	Nos.	1st	2nd	3rd	4th	5th	6th	Unplaced	MOE Assigned
Caroni	25,395	13.0	13.0	16.3	15.7			7.7	26.6
North Eastern	10,357	11.9	13.5	12.2	13.4			13.0	23.0
POS Environs	33,562	10.1	6.7	10.6	18.3			5.7	42.9
St. George East	40,158	9.8	7.8	11.4	16.5			7.2	40.1
St. Patrick	18,428	12.8	12.1	18.5	32.1			2.3	19.9
South Eastern	14,191	14.0	15.0	19.4	14.6			7.8	21.4
Victoria	25,755	14.4	12.6	15.7	23.8			4.6	24.3
Tobago	8,099	21.9	18.0	4.6	4.5			21.0	7.0

All Administrative Districts	--------------------------------- 2001–2005 SEA Choices ---------------------------------							
	Percentages Receiving Each Choice								
	Nos.	1st	2nd	3rd	4th	5th	6th	Unplaced	MOE Assigned
Caroni	15,004	15.2	14.7	15.1	15.1	14.3	12.4		13.6
North Eastern	6,059	16.3	20.4	15.9	13.6	11.0	8.5		14.3
POS & Environs	19,728	15.0	7.0	8.4	10.6	12.2	16.7		30.1
St. George East	24,024	14.7	19.1	10.6	11.8	13.7	14.4		24.7
St. Patrick	11,161	14.6	13.8	14.4	13.3	12.3	17.7		14.3
South Eastern	8,120	18.4	13.4	19.8	16.7	13.3	9.3		9.5
Victoria	14,960	17.0	12.0	12.7	13.6	15.3	16.3		13.2
Tobago	4,748	27.6	23.7	9.0	15.5	6.5	7.0		11.2

Although the competition between the government and denominational schools was rooted in the history of the education system, some government schools such as Queen's Royal College were very highly valued. It was also apparent that newly created schools in specific circuits of schooling could become highly attractive to some consumers, as seen in the case of Bishop's Antsey East or Speyside High School. The apparent dynamism of the market suggests that once a school is regarded as a quality product it could find itself highly valued. The question seems to be: How do we determine what factors contribute to consumers placing a high value on the product? The data from the focus group interviews with parents and children suggested that families valued schools which contributed to the development of the child academically and socially. While different families placed different emphases on the two areas, the ultimate focus was on the protection of the child from physical, academic, and emotional harm.

The mechanism of choice making involved both the demonizing and valorizing of schools within the circuit. Demonizing some schools led to rejection and, in some cases, this process appeared dominant (Croft, 2004). However, in many other instances, valorization was also a significant factor. Most families placed the highest value on traditional denominational schools and this valuation remained relatively stable. The valuing of schools was related to personal consumer values of safety, security, and growth. Government new sector schools rarely provided information about the quality of education offered, and hence were demonized and even considered

spoilers in the education process. Demonization led to rejecting these schools as worthy agents of socialization and education for young ones in the family. Information about schools in the system was relatively limited so that even when schools were valorized, families often relied on anecdotal accounts. It might be that many decisions, then, were made on the basis of inaccurate information. This lack of information coupled with the nature of the system maintained the hegemony of the traditional schools. So that while there was some dynamism and fluidity in the education market, the traditional product retained the highest value.

Multiple factors guided the decision-making process and no one characteristic, including religion, was critically important. Indeed, not all families valued religion as a factor influencing their choice of school, and it appeared that some groups (those that did not have their own schools) were quite prepared to choose government schools. It might be that these groups perceived a level of discrimination in the system. While, historically, denominational schools are accepted by all members of the society, the discourse surrounding *Sumayyah Mohammed v Board of Management of Holy Name Convent Secondary School* (1994) suggests that there were multiple tensions in this plural society as upsurging and traditional religions vied for support and popularity (Mahabir, 2004). It may be that government schools provide the best solution to developing a culture of true inclusion in line with stated constitutional guarantees.

A notable finding was that it was families who made choices, not just parents. In many instances, children had considerable say in determining their fate. In some instances, parents negotiated with children, and in other instances, children were allowed to choose within a set of parameters. Teachers and other members of the extended family could also play a significant role in guiding families in the choice-making process. The role of a teacher in this instance could be pivotal since some teachers understood how the choice system operated and hence their advice could be critical. Whether or not other members of the family had a say depended upon the dynamics and culture of the family. In some instances, since the mother had the role of protector and educator, much was left to her, with the father on occasion as background guard of the moral and value component.

There are many nuances involved in the choice process within Trinidad and Tobago. It may not at all be possible to develop a unified policy agenda that will ensure equity and fairness until the perception of the choosers is that all or most schools are of equal quality and can deliver the expected outcomes. Schools would have to market themselves. The market is dynamic and fluid enough to facilitate the recognition of excellence. Informing and involving parents is a critical aspect that must begin at Ministry level and filter down to both primary and secondary schools. Addressing the issue of demonization requires that greater attention be placed on equalizing the value of all school types and making sure that information is available to stakeholders.

The Ministry's recent decision to reduce the number of choices from six to four is an interesting one. The data suggested that the fifth and sixth choice had little value for many respondents. However, there were different circuits of schooling and these choices were critical in some of the areas where placement was difficult, such as in Caroni and St. George East. The fifth and sixth choices were also important for female candidates, as revealed in Table 5. For these reasons, it seems that the Ministry might reflect on the fairness of reverting to four available choices, especially in districts where there are many available schools. In any case, it is better to allow families to choose rather than to impose a choice as occurs when the choice is four. In the end, few students obtained their first choice anyway, which raised questions of fairness and equity, concerns not easily addressed. The current system of rules for parental choice and open enrolment may not allow the majority of students to be winners, both in terms of making efficient decisions and receiving their choice of school. In the end, both students and schools may be losing in this unique system of choice.

Note

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References

Anthony, K. (1993). Evolving judicial intervention in the administration of Commonwealth Caribbean education. *Caribbean Education Annual*, *2*(1991–92), 27–52.

Bagley, C. A., Woods, P. A., & Glatter, R. (2001). Rejecting schools: Towards a fuller understanding of the process of parental choice. *School Leadership & Management*, *21*(3), 309–325.

Ball, S., Bowe, R., & Gewirtz, S. (1995). Circuits of schooling: A sociological exploration of parental choice in social class contexts. *Sociological Review*, *43*, 52–78.

Basu, R. (2006). Multiethnic neighbourhoods as sites of social capital formation: Examining social to political 'integration' in schools. *Education, Citizenship and Social Justice, 1*(1), 59–82.

Belfield, C. R., & Levin, H. M. (2002). *Education privatization: Causes, consequences and planning implications*. New York: International Institute for Educational Planning, UNESCO.

Bomotti, S. (1998). Pondering the complexities of school choice. *Phi Delta Kappan, 80(*4), 313–316.

Bosetti, L. (2004). Determinants of school choice: Understanding how parents choose elementary schools in Alberta. *Journal of Educational Policy, 19*(4), 387–405.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research, 6,* 97–113.

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research, 1*(1), 8–22.

Bystedt, J., Lynn, S., & Potts, D. (2003). *Moderating to the max*. New York: Paramount Market Publishing.

Campbell, C. C. (1996). *The young colonials: A social history of education in Trinidad and Tobago, 1834–1939*. Mona, Jamaica: The Press UWI.

Campbell, C. C. (1997). *Endless education: Main currents in the education system of modern Trinidad and Tobago, 1939–1986*. Mona, Jamaica: The Press UWI.

Carl, J. (1994). Parental choice as national policy in England and the United States. *Comparative Education Review, 38*(3), 294–322.

Cresswell, J. W., & Plano-Clark,V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

Croft, J. (2004). Positive choice, no choice or total rejection: The perennial problem of school catchments, housing and neighbourhoods. *Housing Studies, 19*(6), 927–945.

Giamouridis, A. (2003). The market in the service of educational equality? The case of education in England. *Evaluation and Research in Education, 17*(4), 223–237.

Goldring, E. B., & Hausman, C. S. (1999). Reasons for parental choice of urban schools. *Journal of Educational Policy, 14*(5), 469–490.

Mahabir, C. (2004). Adjudicating pluralism: The Hijab, law and social change in post-colonial Trinidad. *Social and Legal Studies, 13*(4), 435–442.

Moe, T. (2002). The structure of school choice. In P. Hill (Ed.), *Choice with equity* (pp. 179–212). Stanford, CA: Hoover Institution Press, Stanford University.

Olson, J. C., & Reynolds, T. J. (2001), The means-end approach to understanding consumer decision making. In T. J. Reynolds & T. J. Olson (Eds.), *Understanding consumer decision making: The means-end approach to marketing and advertising strategy* (pp. 3–20). Mahwah, NJ: Lawrence Erlbaum.

Oplatka, I. (2004). The characteristics of the school organization and the constraints on market ideology in education: An institutional view. *Journal of Education Policy, 19*(2), 143–161.

Parsons, E., Chalkley, B., & Jones, A. (2000). School catchments and pupil movements: A case study in parental choice. *Educational Studies, 26*(1), 33–48.

Reay, D., & Lucey, H. (2000). Children, school choice and social differences. *Educational Studies, 26*(1), 83–100.

Reynolds, T. J., & Gutman, J. (2001). Laddering theory, method, analysis, and interpretation. In T. J. Reynolds & J. C. Olson (Eds.), *Understanding consumer decision making: The means-end approach to marketing and advertising strategy* (pp. 25–62). Mahwah, NJ: Lawrence Erlbaum.

Salisbury, D., & Tooley, J. (Eds.). (2005). *What America can learn from school choice in other countries*. Washington, DC: Cato Institute.

Sapelli, C. (2005). The Chilean education voucher system. In D. Salisbury & J. Tooley (Eds.), *What America can learn from school choice in other countries* (pp. 41–62*). Washington, DC: Cato Institute.

Saporito, S. (2003). Private choices, public consequences: Magnet school choice and segregation by race and poverty. *Social Problems, 50*(2)*:* 181–203.

Taylor, C. (2001). Hierarchies and 'local' markets: The geography of the 'lived' market place in secondary education provision, *Journal of Education Policy, 16*(3), 197–214

Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research, 1*(1), 77–100.

Tashakkori, A., & Teddlie, C. (Eds.). (2003*). Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage.

Theobald, R. (2005). School choice in Colorado Springs: The relationship between parental decisions, location and neighbourhood characteristics. *International Research in Geographical and Environmental Education, 14*(2), 92–111.

Trinidad and Tobago. Government (2000). *The Constitution of the Republic of Trinidad and Tobago* (Act No. 4 of 1976; updated in 2000). Port of Spain, Trinidad: Author

Veludo-de-Oliveira, T. M., Ikeda, A. A., & Campomar, M. C. (2006). Discussing laddering application by the means-end chain theory. *Qualitative Report*, *11*(4), 626–642.

Yang, P. Q., & Kayaardi, N. (2004). Who chooses non-public schools for their children? *Educational Studies, 30*(3), 231–249.

Weiss, J. A. (1998). Policy theories and school choice. *Social Science Quarterly, 79*(3), 523–532.

Wells, A. S. (1991). Choice in education: Examining the evidence on equity. *Teachers College Record, 93*(1)*,* 137–155.

Williams, E. (1969). *Inward hunger: The education of a Prime Minister*. London: Andre Deutsch.

Whitty, G., & Edwards, T. (1998). School choice policies in England and the United States: An exploration of their origins and significance. *Comparative Education*, *34*(2), 211–227.

Curbing Students' Disruptive Behaviours in Jamaican Secondary Schools

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Abstract. In recent years, the media have been reporting an increase in students' disruptive behaviours in secondary schools in Jamaica. These disruptive behaviours are many and varied and are causing serious concerns to all stakeholders in education. Sometimes, teachers show an inability to control students entrusted to their care and, at times, teachers and school administrators contribute to students' disruptions through their own behaviours. Teachers may contribute to students' disruptions by inconsistent rule enforcement, teacher insensitivity, non-compliance with school disciplinary policies, and lack of classroom management skills. School administrators may also contribute to students' disruptions through poor communication and decision-making patterns, poor school-community relationships, and poor curriculum and instructional supervision. Students' disruptive behaviours cannot be totally eliminated in our schools, but since school discipline and safety are linked to students' achievement and security, schools must deal effectively with students' disruptions. Schooling will not be successful unless effective discipline is maintained in the school.

Introduction

Students' disruptive behaviours in schools have been widely discussed in the media in recent times. An article on the front page of the *Sunday Gleaner* of April 04, 2004, under the heading, "Parents Blamed for School Violence," stated that the level of violence and disruptive behaviours in Jamaican schools had increased in the last five years. A market research poll carried out by Don Anderson in February and March 2004 indicated that 57% of 1,000 persons from 14 parishes across the island had said that violent student behaviours had increased in schools during 2003.

This poll stated that parents had contributed most to the increase in violent behaviours among students in schools. Thirty-two percent of the respondents blamed inadequate parental guidance for the hostile behaviour of students in schools today, while 30% said that the students themselves were responsible for indiscipline in schools. Other factors contributing to indiscipline in schools identified by Anderson and others (Parents blamed, 2004) were community disputes, domestic disputes, gang warfare, and poverty.

The Governor-General's speech during the opening of Parliament on the 31st March 2004, which was reported in the same article (Parents blamed, 2004), assured the nation that changes would be made in 2004 in the education regulations to reduce the level of violence in the schools. He stated that the new measures would include curriculum changes, a new policy on guidance and counselling, and other disciplinary measures. The Education Minister, Hon. Maxine Henry-Wilson, also commented on the high level of indiscipline in schools and linked the problem to the culture of violence pervading the wider society, and acknowledged that the task at hand was very difficult (Parents blamed, 2004).

The Jamaica Teachers' Association (JTA) highlighted a disturbing pattern of violence in Jamaican schools and cited incidents of rape, attacks on teachers, and murder. The JTA reported that three students had been killed at school during the 2002/2003 academic year and that there were 25 cases of serious injuries on students during the same period.

The Provisions of the Education Act 1980 on Students' Disruptive Behaviour

School discipline and safety have been linked to students' achievement and attendance. School administrators are responsible for reinforcing teacher disciplinary actions and taking responsibility for the more difficult behavioural problems of students in the school. Teachers

complained that almost all forms of problems that students confront in schools are on the increase, especially vandalism, verbal abuse, and physical conflicts. All stakeholders and members of the society agree that this trend must be reversed and schools must develop safe and secure environments for effective teaching and learning. Schools must be prepared to deal with disruptive students by reprimanding and counselling them, because schooling will not be successful unless effective discipline is maintained.

Sections 29 and 30 of the Education Regulations, 1980 are very clear on student behaviour at school. Section 29 states that:

1. A student shall obey the rules of the school he is attending.

2. Where a student considers that he has been victimized or otherwise unfairly treated he may appeal to the principal and, if necessary, the Board.

Section 30 (1) states that:

The principal … may suspend from the institution for a period not exceeding ten days any student—

(a) whose conduct in his opinion is of such a nature that his presence in that institution is having or is likely to have a detrimental effect on the discipline of the institution;

(b) who commits any act which causes injury to any member of staff or to any other student in that institution. (Jamaica. Education Regulations, 1980)

Therefore, teachers and school authorities should be clear on the provisions of the Education Regulations, 1980, and should deal with student disruptions according to the provisions of the law.

The Meaning of Students' Disruptive Behaviour

Students' disruptive behaviours are those that interfere with the activities of the teacher and the students in the classroom. Gray and Richer (1988) posited that students' disruptive behaviours are of many types and some of such behaviours are: noises, giggling, talking, clowning, interrupting, vandalizing, and violence against teachers and students, to mention a few. Classroom disruptions appear to have increased in recent times, and they are now the most difficult problems facing teachers and school administrators in the school and the classroom.

There are many sources of student misbehaviour. Some may originate with the teacher and the classroom conditions, some with the school management and the school environment, others with the parents and the community, while others still can be attributed to the society at large. Students sometimes copy behaviours of parents and teachers. For example, both the home and the school are important agents of socialization where the students are supposed to learn the values, attitudes, and prejudices about themselves and others. Teachers may fail in their effort to motivate students to learn in the classroom due to numerous problems in the school environment, such as poor classroom facilities, large class size, ineffective school leadership, and lack of job satisfaction. Many reasons can prevent parents from passing the desired norms and values to the children. These include: lack of proper parental supervision, low socio-economic status of parents, and poor interpersonal relationship in the home between father and mother, or parent and child, or poor parent-teacher relationship. These factors will certainly affect the behaviour of students at school.

Types of Student Disruptive Behaviours Found in Jamaican Secondary Schools

Disruptive behaviours found in secondary schools are of different types and varied, and may include the following, which occur frequently according to the study done by Ezenne (2004). Many of the behaviours were identified in the classroom and in the school. These are:

- Excessive noise and talking in the classroom
- Bullying and quarrelling with other students
- Fighting with teachers and students
- Stealing of lunch or lunch money
- Seizing of other students' belongings
- Rudeness to teacher and other students
- Refusing to work
- Always lacking materials for work
- Eating in class and chewing gum

- Teasing other students
- Throwing objects in class
- Talking back to the teacher
- Smoking and drug use
- Fondling
- Truancy and excessive lateness to school and class
- Damaging school property
- Defacing/writing on walls and furniture
- Carrying weapons such as razor blades, scissors, nail files, catapult, knife, math instruments, guns, and ice picks
- Restlessness
- Impulsivenesss, for example, quick to start a fight
- Use of indecent language

Some disruptive behaviours of students have their sources in the Ministry of Education and the school organization. These are:

- Poor physical conditions of the classroom due to lack of renovation and repairs
- Small classroom size
- Poor ventilation of the classroom, for example, they may have small windows and no fans
- Large class size
- Overcrowding
- Inefficient teachers, especially those without training
- Teaching without adequate lesson planning
- Irrelevant and outdated curricula
- Poor communication among school administrators, teachers, and students
- Poor school-parent and school-community relationships

How School Administrators and Teachers Respond to Students' Disruptive Behaviours

The school principal is authorized to punish disruptive students and this duty can be delegated to the vice-principal or senior teachers. Some of the following measures can be taken to correct disruptive students depending on the nature of the disruption:

- Warning of the student on at least three occasions
- Counselling of the student by teacher and the guidance counsellor
- Detention of the student
- Cleaning of the classroom
- Weeding of the school garden
- Writing a letter of apology
- Flogging of the student (but this is being discouraged)
- Suspension for serious offences as prescribed by the Education Code.
- Expulsion from the school

It is the duty of teachers to motivate students to learn and also to find ways of creating and encouraging positive school and classroom climates that will help to promote good discipline in the school and the classroom.

How School Administrators and Teachers Can Contribute to Students' Disruptive Behaviours

Very often, school discipline is affected by the teachers' skills and the quality of the school administration. For example, too rigid and unhealthy teacher-student relationships may have a negative influence on students' behaviour and may contribute to students' disruptive behaviour. Bacon (1990) studied school and teacher effectiveness and found that those two factors impact on how students behave and learn and how they feel about themselves.

In another study, Duke and Meckel (1984) discovered that teachers and school administrators contribute to indiscipline and students' disruptive behaviour in some ways, such as inconsistent rule enforcement by teachers, non-compliance with school disciplinary policy, insensitivity, lack of classroom management skills, and inadequate administration of disciplinary problems by school administrators.

Inconsistent rule enforcement has been noticed among teachers. Some teachers neglect certain rules and then suddenly begin to enforce them. Again, one teacher may enforce certain rules while another teacher may choose to ignore the enforcement of that same rule. Coming to class late is a good example of inconsistent rule

enforcement by teachers. These types of inconsistencies create student disrespect for school policies, teachers, and school administrators.

Some teachers do not comply with school rules, for example, monitoring students' activities during lunch and break times and checking to identify students who are not back from break. Watson (2002) noted that student indiscipline is high after lunch break each day. Students disobey certain rules simply because they notice that their teachers ignore or show little interest in enforcing such rules.

Teachers may be insensitive to some of their students' problems. They regard some of their students as bad students and ignore those students' concerns in the classroom. By failing to display willingness to help students overcome problems, these teachers contribute to student feelings of isolation, resentment, and low self-esteem, and some of them will become disruptive.

Many untrained teachers display little classroom management skills, and this category of teachers lack skills in diagnosing behaviour problems of students and prescribing appropriate instructional treatments for such problems. Many students become disruptive under such untrained teachers.

Some school administrators select school rules that they want to enforce. For example, they often enforce rules relating to attendance, smoking, and disrespect to school authorities, but they often ignore rules dealing with the personal welfare of students such as theft of property, name-calling, fighting, and intimidation. Therefore, some students feel that school administrators sometimes regard students' problems as secondary.

Suggestions for Effective Management of Students' Disruptive Behaviours in Jamaican Secondary Schools

Effective management of students' disruptive behaviours in schools should involve school administrators, teachers, students, and parents:

1. Students, teachers, and school administrators should meet to develop classroom rules, and these rules should be understood by all and reviewed from time to time. Students should take an active part in developing and enforcing classroom rules.

2. School administrators should discuss with teachers the problem of inconsistent rule enforcement by teachers and its implications for student compliance. Classroom rules should be enforced consistently and without fear or favour by teachers.

3. Good records should be kept of students' disruptive behaviours and be readily available for reference.

4. Students and teachers should have a procedure for handling conflicts at the classroom level.

5. Parents and members of the community should be contacted regularly by school management to assist in developing plans for assisting troublesome students, such as those involved in the use of drugs, smoking, and violence.

6. School authorities should develop plans to reward students who keep out of trouble, and also develop programmes to help students with behaviour problems that should focus on ways to change their social behaviours.

7. Untrained teachers should be sent for training to improve their classroom management skills and adolescent behaviour management.

8. School disciplinary objectives should be reviewed annually in school-wide meetings, and students should be allowed to take part in making and enforcing school and classroom rules.

9. Parents should be encouraged to ensure a healthy home environment for their children's upbringing by creating an environment of love, care, warmth, and respect at home.

10. Teachers should remind students of what is expected of them in the classroom and the school at all times.

Conclusion

Students' disruptive behaviours will continue to be the greatest problem facing teachers, school administrators, and parents because students' misbehaviours will never be completely eliminated from schools. Teachers, parents, and school administrators have a responsibility to

reduce the level of disruptive behaviours in schools. A low level of disruptive behaviours in the classroom will help teachers to motivate students to learn.

Students' misbehaviours interfere with teaching and learning in the classroom, deprive students of their basic right to learn, and also lower student achievement levels. Misbehaviours also affect teachers' basic right to teach and, often, valuable instructional time is spent on controlling students' behaviour. Teachers, students, and parents must understand that effective teaching and learning are possible only when students behave in appropriate ways the school.

The goal of classroom discipline is to help students to learn self-discipline by controlling their own behaviours. Teachers should always concentrate on what they can do to encourage positive behaviours and motivate students to learn. Teachers can do this by establishing a classroom climate of mutual trust and respect in which students' needs are met. Good discipline must grow out of mutual trust and respect between teachers and students; it does not depend on more rules and harsh punishments. However, teachers must be consistent in enforcing discipline in the classroom and the school.

Again, teachers should try to provide a stimulating learning environment, and encourage and assist students in their learning by arranging suitable curricular activities that satisfy students' basic needs. This will encourage a sense of commitment to learning among students, because students are stimulated to work hard when encouragement and assistance are given in meeting their needs.

Teachers and school administrators should be more serious about improving students' achievements, by paying more attention to teachers' classroom management skills, motivating students to learn, and establishing a positive relationship that will help them to improve their achievements in the school. Lowering the level of students' disruptions in the school will help to reduce teachers' stress and increase their potential success in the school. The school, the home, and the community should work together to reduce the level of students' disruptive behaviours in Jamaican schools.

References

Bacon, S. (1990). *Classroom management strategies.* New York: Longman.

Duke, D. L., & Meckel, A. (1983). *Teachers' guide to classroom management*. New York: Random House.

Ezenne, A. (2004). *Management of students disruptive behaviours in Jamaican schools.* Paper presented at the Biennial Cross-Campus Conference of UWI. Schools of Education, Mona, Jamaica.

Gray, I., & Richer, J. (1988). *Classroom responses to disruptive behaviour*. Basingstoke, UK: Macmillan Education.

Jamaica. (1980). *Education regulations, 1980.* Kingston, Jamaica: Government Printer.

Parents blamed for school violence. (2004, April 4). *Sunday Gleaner*, p. A1.

Watson, J. (2002). *Disciplinary Problems Among Students in Upgraded All-Age Schools in Rural Jamaica*. Unpublished B.Ed. study, The University of the West Indies, Mona, Jamaica.

Managing Student Discipline at the Curepe Junior Secondary School: A Pilot Research Project

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Abstract. This study is aimed at sensitizing teachers and other key stakeholders, with a view to helping students to manage and improve their discipline at the Curepe Junior Secondary School, using a school discipline model—the Behavioral Evaluation for Students and Teachers (B.E.S.T.) method. Student indiscipline in our schools is one of the major obstacles to effective teaching and learning. The problem has become so alarming that the Ministry of Education commissioned a team from the Centre for Criminology at The University of the West Indies, headed by Professor Deosaran, to identify the main types and causes of delinquent student behaviour in our schools and to develop a discipline model as a guide for teachers. Curepe Junior Secondary School was one of the schools in the sample that assisted the team in developing such a discipline model, which, so far, has not been tested. This study is therefore part of a larger study aimed at allowing students to take charge and manage their own discipline as they strive to cultivate a culture of peace and civility in their schools. This initial phase is a first step in sensitizing all stakeholders—teachers, students, parents, and the wider community—to the process of empowering students to manage their own affairs in the school, especially in the area of discipline.

Background

The Curepe Junior Secondary School is a three-year, double-shift school with a student population of approximately 800 students on each shift. The students entering the school are generally from the lower SES background with lower than average ability ranges. The school offers a wide range of academic, technical, and vocational subjects. During this three-year period, students are prepared for a national examination and are allocated places in five- or seven-year schools to complete their secondary level education. The curriculum is designed to offer a holistic approach to learning and the teachers are well qualified to deliver the curriculum effectively. However, teaching and learning strategies still follow the traditional "chalk and talk" with little, if any, focus on problem-solving approaches to learning.

The school is aesthetically pleasing with a clean environment and accessible from the "Priority Bus Route" and the newly paved Farm Road. It is important to note, however, that the school is in the midst of a socially depressed squatting area and some students have fallen victims to some of the destructive elements. Teaching and learning take place against a constant threat of crime and violence. Indeed, a recent research on delinquency in the school conducted by Professor Ramesh Deosaran found that there is a growing culture of violence and delinquency, with a wide range of delinquent behaviours such as truancy, fighting, bullying, verbal abuses, and other anti-social behaviours. Furthermore, the school has recognized that some of the contributory factors are poor parental involvement in school; poor self-image in students; little community support; poor parenting at home, especially in single-parent families; and a general malaise and lack of motivation among the students.

Trinidad and Tobago's Ministry of Education *Strategic Plan, 2002–2006* (2002) explicitly states that students, as one of the major stakeholders of the education system, must play a pivotal role in the development of educational programmes that cater to their needs and interests, and should be afforded an educational environment that is safe, secure, and engenders the building of their confidence (p. 34).

While there are many initiatives that focus on student-friendly schools (The School Intervention Strategies; Student Support Services; Student Discipline Initiative; Peace, Love and Understanding in Schools), there are few student-focused programmes that focus on the students themselves at the class and school levels. Professor Deosaran, in his recent study on crime and delinquency in schools (2004), recognized the urgent need for students, as one unified body in schools, to assist their peers to develop a culture of peace and unity through positive interpersonal relationships.

As part of these strategic initiatives, this pilot study is aimed at empowering students to develop strategies to manage and improve their own discipline.

The Curepe Junior Secondary School's Strategic Plan recognizes that there is an urgent need to:

1. develop students who are responsible and accountable for their own actions;

2. outfit students with self-control techniques;

3. develop in students good interpersonal skills;

4. develop in the students a positive mental attitude and a respect for authority;

5. develop in students an appreciation for social skills to help them integrate into mainstream society;

6. develop a civic-minded student who accepts and respects the law through his actions and who respects the rights and properties of others.

The Study

Serious aggressive behaviours occur in approximately 5–10% of children, with boys outnumbering girls by almost 3 to 1. Such aggressive behaviours, especially when they occur in combination with poor peer relationships, academic failure, and poor parenting practices, have proven to be the forerunners of later aggressive behaviour. The need to develop effective interventions that will avert this developmental trajectory is urgent.

This study, therefore, is meant to provide both teachers and students with their own discipline tools. It is a timely one that is eagerly welcomed by the school community. The study focuses on intervention strategies that are designed for 14- to 15-year-olds, and employs an array of cognitive behaviour interventions. In a how-to, and nuts-and-bolts approach, this pilot study describes the various ways student group leaders, in collaboration with teachers, school administrators, and parents, can implement effective interventions in the areas of conflict resolution, leadership training, cooperation, teamwork, respect and tolerance for others, and social responsibility.

Review of the Literature

No one theory can adequately explain student indiscipline. There is, first of all, the cognitive-behavioural theory, which asserts that all behaviour learnt can also be unlearnt. A student's misbehaviour can be altered and reshaped into a more socially acceptable behaviour by directly manipulating the student's environment through the systematic use of rewards.

Another theory is the psychodynamics/ interpersonal theory, which notes that behaviour is strongly influenced by inherent, genetically programmed drives and needs. Children's misbehaviour is a function of inadequate defenses needed to control drives. Depending on the child's age, various defense mechanisms are used to ward off anxiety aroused by libidinal needs (Hyman, 1997).

Another useful theory that attempts to explain student indiscipline is the humanistic needs theory. This theory holds that environmental pressures interfere with children's efforts towards self-actualization. Humanists believe that caring, empathy, and other humanistic values should be supported and enhanced by schools.

Another related theory is the ecological/ systems theory. This position states that misbehaviour is the result of an ongoing, complex interaction of all ecological and interpersonal forces within the system, which includes the students' total life experiences with every aspect of the environment. Student misbehaviour should be viewed as a malfunction of the system, rather than in terms of individual student actions. Student positive behaviour can be inspired by modifying

the ecology of the school (Hyman, 1997; Kohl, 1976).

Many teachers are well aware of labelling theory and the self-fulfilling prophecy, which provide a useful framework to understand deviance in schools (Hargreaves, 1975). Acts become defined as deviant when, through the teacher's interpretation of deviance, teachers' labelling of students can cause students to act in ways that are not in accordance with the school's established norms.

Numerous studies on school deviance have identified a range of causes for school delinquency and violence. Smith (2003) has noted that school deviance is a global concern in all countries. His work in the European context identified a wide range of deviant behaviours in schools. These include bullying, verbal aggression, acts of vandalism, fighting, sexual harassment, and weapons in schools. He notes that some of the strategies schools are using to reduce school violence are teacher training, peer mediation, school projects, and greater school-community collaboration.

In the Australian context, some researchers on school violence (Lawrence, Steed, & Young, 1984) note that school violence is more prevalent in comprehensive schools where there are teacher labelling of students, lack of resources, irrelevant curriculum, and weak parental support. Glover, Cartwright, and Gleeson (1998) have further explored the link between student positive behaviour in the school and cooperative attitudes between teachers and pupils. They outlined the development of a shared value system and a student-friendly curriculum that focuses on pastoral guidance and students' positive self-esteem.

There has also been an attempt to show the relationship between school violence and masculinity (Mills, 2001). Mills notes that male stereotyping such as "boys will be boys" and "poor boys" has led to male violence such as bullying, sexual harassment, and aggressive behaviour. School violence has become "normalized" forms of masculinity. He advocates that there is an urgent need to place boys' educational experiences within the wider gender relations in schools and society.

In the local context, there is the recent study done on school violence and delinquency (Deosaran, 2004). Ten secondary schools throughout Trinidad and Tobago were selected—2 junior secondary, 4 five-year, and 4 seven-year schools. The study identifies a wide range of delinquent behaviours such as truancy, fire setting, bomb threats, substance abuse, vandalism, bullying, verbal abuse, fighting, classroom disruption, and weapons in schools. Some of the recommendations of the study to reduce deviance in schools were training programmes for teachers, greater home-school support, peer mediation, and a whole-school approach in dealing with school violence and delinquent behaviour.

Description of the Model

The Behavioral Evaluation for Students and Teachers (B.E.S.T.) model was recommended for use in schools by a team from the Centre for Criminology of The University of the West Indies (UWI) (Deosaran, 2004) in a recent study of delinquent behaviour in a sample of 10 schools throughout Trinidad and Tobago. The following are the main features of the model:

1. It is an evidenced-based template for recording student misbehaviour and inspiring positive changes.

2. It allows for specific behaviours to be measured within a continuum of possible behaviours (mild to severe) formed into categories.

3. The observer (the teacher) enters each student's act of indiscipline in the behavioural assessment diary (template).

4. It is collaborative—teachers, students, parents, supportive staff must be sensitized to the goals and objectives of this intervention.

5. It is essentially a social contract between all parties involved to empower students to gain a sense of collective responsibility of self-regulation and classroom vigilance.

6. There are three standards that we can use to measure student misbehaviour:

   - one can measure his/her behaviour and compare it with subsequent behaviour—to assess the extent of improvement – *self assessment*

- one can measure the misbehaviour and compare it with the mean of the class – *peer assessment*
- one can measure the student behaviour and compare it with a score that we can set as an acceptable standard for that particular behaviour – *acceptable standard*

The third option is the preferred one in the B.E.S.T. approach, which uses agreed acceptable standards.

How the Model Works

The following are the different steps that teachers can use in their respective classes, using the suggested B.E.S.T. model as a guide:

1. Have a behavioural diary with the names of all students in the class (give each student an identification number).

2. Ensure that there is a complete list of all acts of misbehaviour in the class.

3. Ensure that there are two forms: in-classroom and out-of-classroom.

4. Make a record in the diary for each wilful act of misbehaviour by the student. The safety officer/ guidance officer/ teachers/ security officers can monitor out-of-class behaviours.

5. Record misbehaviour in the class. This depends on the teacher and the class. The following are some useful hints in recording the different misbehaviours:
   - it should be standardized
   - it should be discretionary
   - choice of day should be amenable to subsequent comparisons

Scoring a deviant act, for example, fighting. Both the teacher and the students can arrive at some common understanding using the following guide:

1. Estimate time frame (e.g., 12-week period).

2. Take a baseline measure (first 3 weeks).

3. Consult and negotiate with students at the end of the third week to reduce the misbehaviour

at the end of the 12-week period – a classroom hearing; an implicit social contract emerges.

4. Set a benchmark for improved behaviour (e.g., 8 deviant behaviours or less by week 8).

5. Have another consultation at week 8 to get reasons if benchmark is not met. There should be a system of rewards and punishment agreed by all (remember the social contract).

6. Have further consultation with students to sustain this heightened level of civility in the class.

The Initial Phase

In this first phase, all the key stakeholders—students, teachers, school personnel, and parents—were introduced to the different steps in the process.

Students, Teachers, and Other Stakeholders

1. Two Form 2s (one from each shift) were chosen. The subject teachers, after consultation, agreed on the two forms.

2. The form and subject teachers from both shifts of the selected forms.

3. The parents of these students were sensitized about the project.

4. The teachers of these forms agreed to participate in the project.

5. A series of workshops was held to familiarize teachers and the school management team with this B.E.S.T. approach.

6. The teachers made suggestions to improve the instrument within the context of their school situation.

7. Other key stakeholders (safety officers, guidance officers, security officers, members of the PTA) were all sensitized about the project.

There were follow-up workshops to make further adjustments to the template and make it more relevant to the cultural context at the Curepe Junior Secondary School. The following were the

revised deviant behaviors identified by the students, teachers, school personnel, and parents:

- No homework
- Late with no excuse
- Skipping class
- Answering back to teacher
- Verbal abuse to teacher
- Verbal abuse to student
- Damaging school property
- Carrying weapon
- Abuse of cell phone
- Fighting
- Leaving class without permission
- Stealing
- Smoking
- Doing illegal drugs
- Peddling illegal drugs
- Drinking alcohol
- Threatening behaviuor
- Disruptive behaviour
- Obscene language
- Speaking out of turn
- Throwing missiles in class
- Other behaviours (please specify)

The school guidance officer or safety officer can also record out-of-classroom behaviours.

It is hoped that the second phase—the implementation phase—will begin shortly.

References

Deosaran, R. (2004). *Benchmarking violence and delinquency in the secondary school: Towards a culture of peace and civility* (Vols. 1–3). St. Augustine, Trinidad: Centre for Criminology and Criminal Justice, UWI: Author.

Glover, D., Cartwright, N., & Gleeson, D. (1998). *Towards bully-free schools*. Buckingham, UK: Open University Press.

Hargreaves, D. H. (1975). *Deviance in classrooms*. London: Routledge & Kegan Paul.

Hyman, A. (1997). *School discipline and school violence*. London: Allyn & Bacon.

Kohl, H. (1976). *The open classroom*. New York: Schocken Books.

Lawrence, J., Steed, D., & Young, P. (1984). *Disruptive children, disruptive schools*? London: Nichols Pub.

Mills, M. (2001). *Challenging violence in schools*. Buckingham, UK: Open University Press.

Smith, P. K. (2003). *Violence in schools: The response in Europe*. London: Routledge & Kegan Paul.

Trinidad and Tobago. Ministry of Education. (2002). *Strategic plan, 2002–2006*. Port of Spain, Trinidad: Author.

Perceptions of School Health:
A Study of Selected Primary Schools in the
St. George East Education District of Trinidad and Tobago

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Abstract. This study investigated teachers' perceptions of school health in 18 primary government and government-assisted schools in the St. George East Education District of Trinidad and Tobago. School health issues have emerged as significant factors in promoting effective learning in our school system. Children learn best when they are healthy, safe, and in close and enduring relationships with family, peers, and teachers. Recent research on school health has revealed that healthy schools allow students to make healthier choices and improve their overall academic outcomes. Also, healthy schools influence the development of healthy habits and produce the desired changes in students' health behaviours. Four key health categories—community-school linkages, school environmental factors, administrative and technical support, and student-related issues—were used to ascertain the state of health in our schools and make comparisons among them.

Introduction

The state of health of primary schools in Trinidad and Tobago has been described as "organizational pathologies" with poor motivation of teachers, student indiscipline, low levels of academic achievement, teacher and student violence, and absenteeism (Trinidad and Tobago [T&T]. National Task Force on Education, 1994). Indeed, the 2002–2006 strategic plan of the Ministry of Education (T&T. Ministry of Education [MOE], 2002) has noted an alarming increase of crime and violence in our schools, which is having an adverse effect on positive learning and teaching.

So critical was the situation that the Ministry of Education commissioned a study in 2002 on delinquency in schools, which was also required to make recommendations to improve the overall health of our schools (Deosaran, 2004). This study identified an alarming increase in student delinquent behaviour in schools—bullying, truancy, verbal abuse, fighting, and disrespect to teachers, among others.

The Ministry of Education has also taken some initiatives to improve the health and safety of our schools. Some of these are:

- school feeding programmes;
- student support services;
- peace promotion programmes;
- empowerment of student councils;
- improved home-school linkages
- more involvement of non-governmental organizations (NGOs) in promoting school health practices.

At the global level, the World Health Organization (WHO) launched a worldwide school health initiative to assist schools, community, parents, and students to find appropriate and unique ways to become "health promoting schools." These schools display the following characteristics:

- a safe and healthy environment, both physical and psychosocial
- effective skills-based education
- access to health services
- school policies and practices that support health
- improvement of the health of the community

Research on school health has confirmed that schools which display healthy characteristics have a profound positive effect on the lives of children and set the stage for effective learning to take place (Vamos, 2006).

Literature Review

Initially, the health metaphor was used by Matthew Miles (1969) to examine the properties of schools. According to Miles, a healthy organization is one that not only survives in its environment, but also continues to grow and prosper over the long term. Miles developed a configuration of healthy organizations that consists of a range of variables such as goal focus, autonomy, morale, growth and development, and task needs. Since then, many researchers have examined school health and have found that healthy school practices are a guide in developing and implementing policies, programmes, and interventions to ensure a safe and healthy school environment (Allensworth, 1993; Bevans, Bradshaw, Miech, & Leaf, 2007; Brener et al., 2006; Jones, Axelrad, & Wattingney, 2007; Korkmaz, 2006). Other health researchers have found a strong relationship between students' mental health and schools with mental health providers (Weist, Rubin, Moore, Adelsheim, & Wrobel, 2007) and increased academic performance (Bevans et al., 2007). Within recent times, there has emerged a global initiative (World Health Organization [WHO], 1996) to help schools and the wider community promote good health practices around the world. At the World Education Forum in Dakar in April, 2000, WHO, UNICEF, UNESCO, and the World Bank proposed to work together to focus resources on effective school health. Positive experiences by these international organizations suggest that education and health workers, teachers, students, parents, and community members should work together to implement effective school health and nutrition programmes. Trinidad and Tobago is one of the countries involved in this worldwide effort to improve the health of schools. The Ministry of Education, in collaboration with other ministries and NGOs, is actively involved in promoting good health practices in our schools.

Research Questions and Hypotheses

The following were the research questions that were pertinent to the study:

1. *What was the overall health of the sampled schools based on the mean scores representing all four categories of school health?*

2. *What was the health of the sampled schools based on the mean scores representing each of the four categories of school health?*

3. *Were there significant differences between the mean scores representing school health in all four health categories in government and government-assisted schools?*

4. *Were there significant differences between the mean scores representing school health in each of the four health categories in government and government-assisted schools?*

Limitations/Delimitations of the Study

The research was confined to a random sample of government and government-assisted primary schools in one educational district in Trinidad and Tobago. This is the largest district in the country with a wide but representative range of schools. Given the infancy stage of school health studies in Trinidad and Tobago, it was considered practical to delimit the study to teachers' perceptions, as a base and starting point for future research in the area.

Methodology

The study was a descriptive one, using statistical means scores and t-tests to rank and compare schools in the sample. A four-point Likert-type questionnaire was used to get teachers' responses on their perceptions of school health. The items were drawn from the following sources:

- WHO manual on school health
- experienced teachers from selected schools
- experts in the field of health education

There were 43 simple statements combined into four conceptual categories–administrative/technical support, school environmental factors, community/school linkages, and student-related factors:

1. There were 11 items in the administrative/technical category, for example, the school has a health action team for responding when students are injured on the school compound.

2. There were eight items in the school environment category, for example, there is adequate ventilation in all school areas where students gather.

3. There were 13 items in the community/school linkage category, for example, parents and the wider community are involved in decision making on school health matters.

4. There were 11 items in the student-related category, for example, sufficient time each week is allocated to health issues in the school curriculum.

For the purpose of this study, school health was therefore confined to the 43 items related to the four conceptual health categories previously identified.

School and Teacher Sample

The school sample consisted of 18 randomly selected primary schools representing the different school types in the St. George East Education District of Trinidad and Tobago. A total of 166 teachers with over 10 years experience participated in the exercise. There were 46 teachers from 5 government schools and 120 teachers from 13 government-assisted schools. Each school was assigned a number because of the confidential nature of the exercise. Table 1 gives a breakdown of the school types, and number of schools and teachers in the sample.

Table 1. Breakdown of School Types, and Number of Schools and Teachers

School Type	Number of Schools	Number of Teachers
Government	5	46
Hindu	3	27
Presbyterian	2	18
Roman Catholic	4	39
Islamic	2	18
Anglican	2	18
Total	18	166

The data were analysed using the Statistical Package for Social Sciences (SPSS-SPG2). Descriptive and inferential statistics, such as school means and t-tests, were used to rank schools according to their mean health scores and to make comparisons between schools on the different school health categories.

Findings

Research Question 1: What was the overall health of the sampled schools based on the overall mean scores representing all four categories of school health?

This research question ranked the schools according to the mean scores on all four school health categories. The perfect score was 172. School 1 (Islamic) was ranked highest (140/172) while school 18 (government) was ranked the lowest (71/172) (Table 2).

A comparison was also made between the government and government-assisted schools on all four health categories. The perfect score was 172. The government-assisted schools ranked higher (104/172) when compared to the government schools (91/172) (Figure 1).

Research Question 2: What was the health of the sampled schools based on the mean scores representing each of the four categories of school health?

This research question addressed the health ranking of the sampled schools on each of the four health categories.

School-community linkages. The Islamic school (no. 1) ranked the highest (34/44) while the Roman Catholic school (girls) (no. 18) ranked the lowest. Only four schools (nos. 1, 2, 3, 7) scored above the mean score (Table 3).

Table 2: Schools Ranked on All Four Health Categories

School Number	School Type	Total (172)
1	Islamic	140
2	Hindu	139
3	Islamic	120
4	Hindu	110
5	Roman Catholic (girls)	104
5	Government	103
7	Anglican	102
8	Government	101
9	Government	101
10	Presbyterian	100
11	Presbyterian	99
12	Roman Catholic (boys)	95
13	Anglican	94
14	Hindu	92
15	Roman Catholic (boys)	85
16	Government	80
17	Roman Catholic (girls)	76
18	Government	71
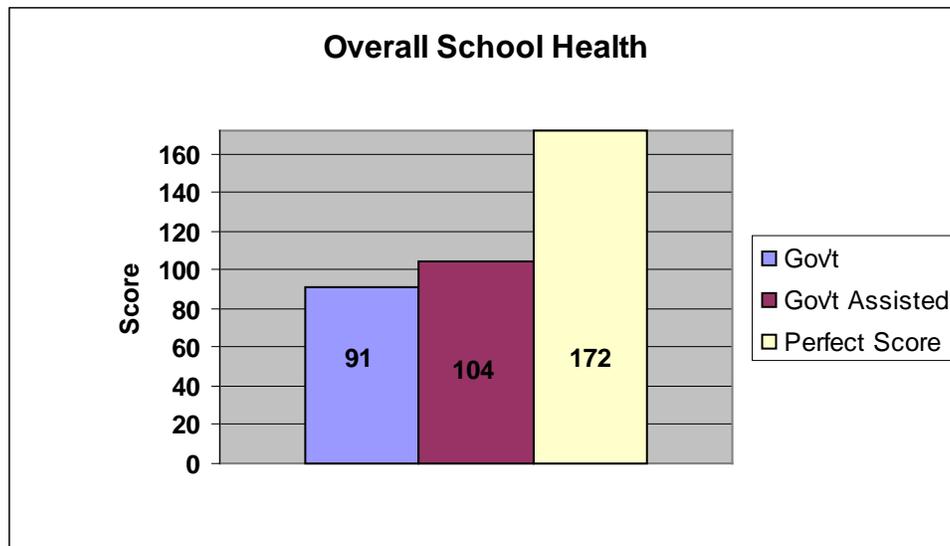
Figure 1. Government and government-assisted schools compared on all four categories.

Table 3. Community Linkages Category

School Number	School Type	Community Linkages (44)
1	Islamic	34
2	Hindu	34
3	Islamic	25
7	Anglican	23
8	Government	22
11	Presbyterian	22
4	Hindu	22
5	Roman Catholic (girls)	21
6	Government	20
16	Government	20
13	Anglican	20
10	Presbyterian	20
14	Hindu	20
12	Roman Catholic (boys)	19
18	Government	18
15	Roman Catholic (boys)	18
9	Government	17
17	Roman Catholic (girls)	17

Comparisons of the average score of government and government-assisted schools showed that the government-assisted schools scored higher (22/44) than the government schools (Figure 2).

School environment factors. With regard to the school environment category, the Hindu school (no. 2) scored the highest (26/32) while the Roman Catholic school (no. 17) scored the lowest (12/32). Thirteen schools (nos. 2, 1, 3, 9, 4, 6, 14, 13, 7, 5, 12, 8, 10) scored above the mean. Over 70% of the schools scored above the mean in this category (Table 4).

Comparisons between the government and government-assisted schools in this category revealed that the government-assisted schools scored marginally higher (19/32) than the government schools (18/32) (Figure 3).

Administrative support. The administrative/ technical support category showed that two government-assisted schools (nos. 2, 1) scored the highest (47/56) while the government school (no.

18) scored the lowest (23/56). Over 80% of the schools scored above the mean in this category (Table 5).

When the government and government-assisted schools were compared, the average score of the administrative and technical/support category of government schools was 31 while the average score of the government schools was 36 (Figure 4).

Student-related factors. In this student-related category, two government-assisted schools (nos. 1, 2) scored the highest (33/40) while two government schools (nos. 16, 18) scored the lowest (17/40). Over 90% of the schools scored above the mean (Table 6).

Further comparisons between the government and government-assisted schools revealed that the government-assisted schools scored higher (27/40) than the government schools (23/40) (Figure 5).

Community-School Linkages
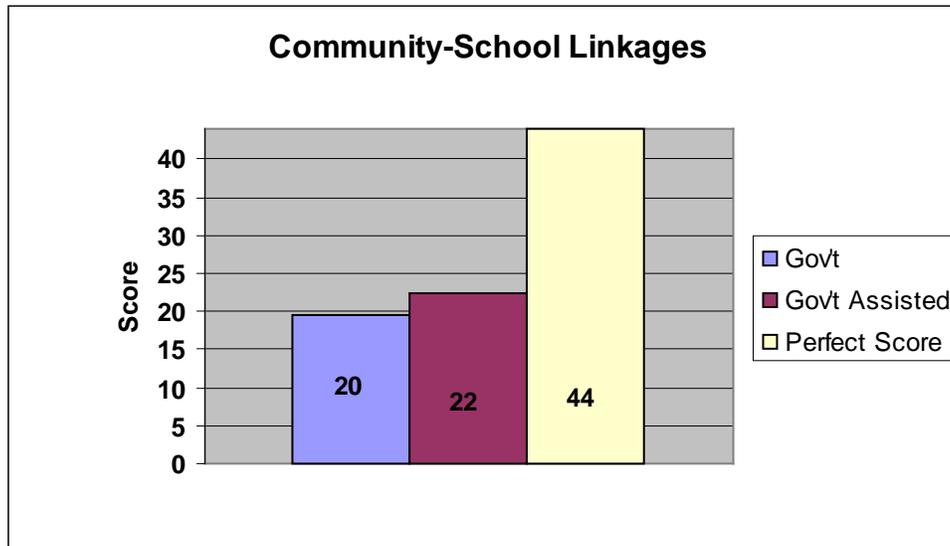
Figure 2. Community linkages – government and government-assisted schools.

Table 4. School Environment

School Number	School Type	Environment(32)
2	Hindu	26
1	Islamic	25
3	Islamic	23
9	Government	23
4	Hindu	22
6	Government	21
14	Hindu	19
13	Anglican	19
7	Anglican	18
5	Roman Catholic (girls)	18
12	Roman Catholic (boys)	18
8	Government	17
10	Presbyterian	17
11	Presbyterian	16
15	Roman Catholic (boys)	16
16	Government	14
18	Government	13
17	Roman Catholic (girls)	12

School Environment Factors
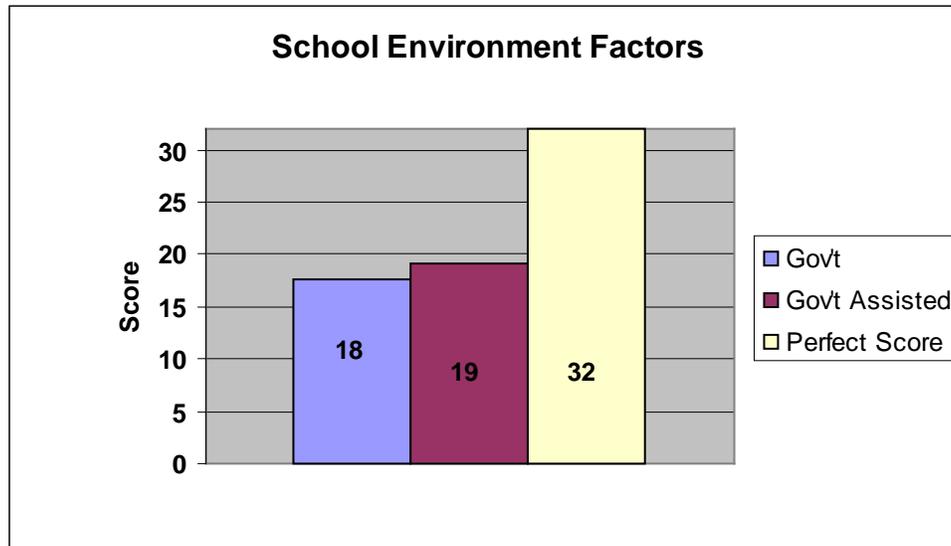
Figure 3. School environment.

Table 5. Administrative and Technical Support

School Number	School Type	Administrative/Technical Support (56)
2	Hindu	47
1	Islamic	47
3	Islamic	43
5	Roman Catholic (girls)	38
4	Hindu	37
10	Presbyterian	37
9	Government	37
7	Anglican	36
8	Government	36
11	Presbyterian	34
6	Government	33
13	Anglican	32
12	Roman Catholic (boys)	32
14	Hindu	29
15	Roman Catholic (boys)	29
16	Government	28
17	Roman Catholic (girls)	27
18	Government	23
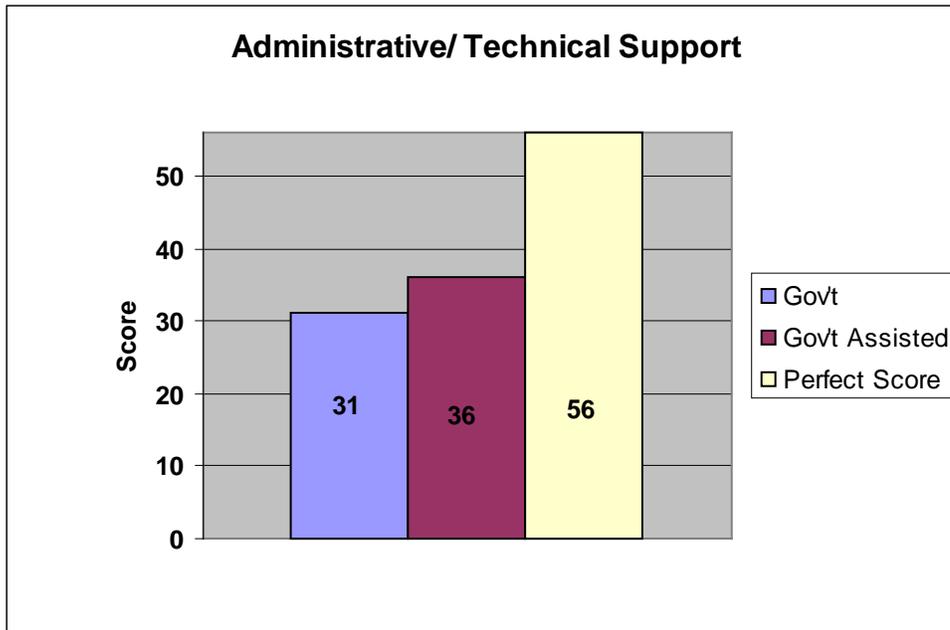
Figure 4. Administrative/technical support.

Table 6. Student-Related Issues

School Number	School Type	Student-Related Issues (40)
1	Islamic	33
2	Hindu	33
6	Government	30
4	Hindu	29
3	Islamic	28
11	Presbyterian	28
10	Presbyterian	27
5	Roman Catholic (girls)	26
8	Government	26
12	Roman Catholic (boys)	26
7	Anglican	25
14	Hindu	24
9	Government	24
13	Anglican	24
15	Roman Catholic (boys)	22
17	Roman Catholic (girls)	20
16	Government	17
18	Government	17
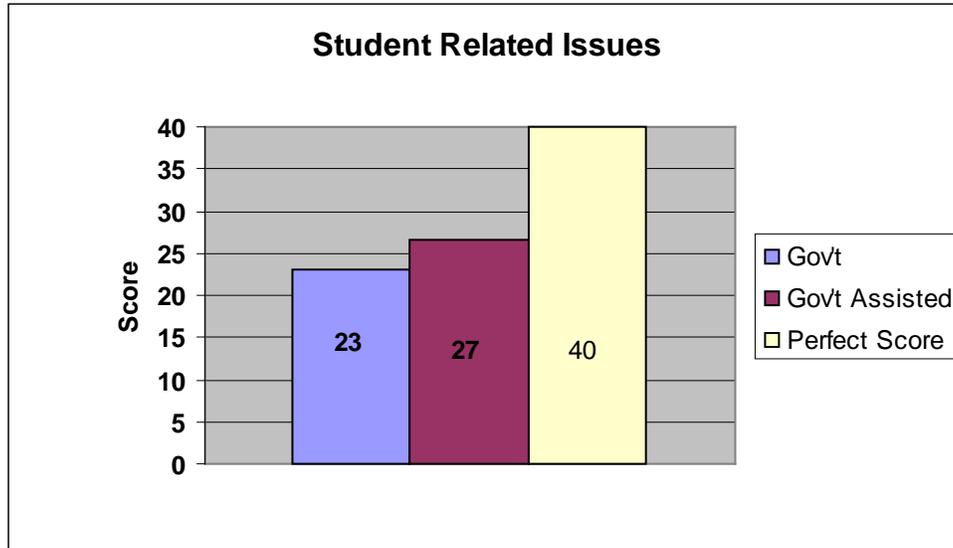
Figure 5. Student-related issues.

Research Question 3: Were there significant differences between the mean scores representing school health in all four health categories in government and government-assisted schools?

Significant differences were found to exist between teachers' perceptions of overall school health in government and government-assisted schools. The t-value was 0.004, which was less than the rejection criteria of 0.05 (Table 7).

Table 7. Mean Scores and Significant Differences Between Government and Government-Assisted Schools

School Type	Overall Mean Score
Government	90
Government-assisted	101
Mean diff.	11
Df	164
T–Value	0.004

Rejection criteria > =0.05
df =degrees of freedom

Research Question 4: Were there significant differences between the mean scores representing school health in each of the four health categories in government and government-assisted schools?

Significant differences were found to exist in three out of the four school health categories. There were significant differences in community-school linkages (t-value=0.047); in the administrative/technical support (t-value=0.005); and in the student-related category (t-value=0.001). There were, however, no significant differences found in the school environment category (t-value= 0.068) (Table 8).

Table 8. Mean Scores and Significant Differences on Each Health Category

School Type	Mean Score Health Category 1 (community linkages)	Mean Score Health Category 2 (school environment)	Mean Score Health Category 3 (administrative support)	Mean Score Health Category 4 (student-related issues)
Government	20	17	31	22
Government-assisted	22	19	35	26
Mean diff.	2	2	4	4
df	164	164	164	164
T-value	0.047	0.068	0.005	0.001

Rejection criteria: T-value >= 0.05
df =degrees of freedom

Conclusion

The findings revealed that the government-assisted schools appear to exhibit healthier characteristics than the government schools in the sample. In some health categories (student-related issues (90%), and school environment (80%)) both government and government-assisted schools were perceived to be adequate. There were no perceived significant differences by teachers of both government and government-assisted schools in the area of school environment. One possible reason is that the majority of our primary schools have been neglected with regard to school security, physical amenities, and school repairs. In the area of community-school linkages, the majority of schools in the sample were perceived to be inadequate.

The study revealed that most of the schools in the sample are not in a good state of health, especially the government schools. Greater effort must be made by all stakeholders to improve the state of health of our schools if we are to achieve our 2020 Vision as a developed status nation. Greater attention must be paid to government schools, which appear to be in a state of poor health. All stakeholders—parents, Ministry of Education, teachers, Parent Teachers' Associations, and the wider community—must work together to improve the health in our schools. There ought to be more research on school health programmes in order to build capacity to help implement policies that can improve health in all our schools. Education and health support each other. Neither is possible alone. Together they serve as a foundation for a better world.

References

Allensworth, D. (1993). Health education: State of the art. *Journal of School Health, 63*(1), 14–20.

Bevans, K., Bradshaw, C., Miech, R., & Leaf, P. (2007). Staff and school-level predictors of school organizational health: A multilevel analysis. *Journal of School Health, 77*(6), 294–302.

Brener, N, Pejavara, A., Barrios, L., Crosset, L., Lee, S., McKenna, M., Michael, S., & Wechsler, H. (2006). Applying the school health index to a nationally representative sample of schools. *Journal of School Health, 76*(2), 57–66.

Deosaran, R. (2004). *Benchmarking violence and delinquency in the secondary school. Towards a culture of peace and civility* (Vols. 1–3). St. Augustine, Trinidad: Centre for Criminology and Criminal Justice, UWI.

Jones, S., Axelrad, R., & Wattigney, W. (2007). Healthy and safe school environment, Part II, Physical school environment: Results from the School Health Policies and Programs Study 2006. *Journal of School Health, 77*(8), 544–556.

Korkmaz, M. (2006). The relationship between organizational health and robust school vision in elementary schools. *Educational Research Quarterly, 30*(1), 14–36.

Miles, M. B. (1969) Planned change and organizational health. In F. Carver & T. J. Sergiovanni (Eds.), *Organizations and human behavior* (pp. 375–391). New York: McGraw Hill.

Myers-Clark, S., & Christopher, S. (2001). Effectiveness of a health course at influencing preservice teachers' attitudes towards teaching health. *Journal of School Health, 71*(9), 462–466.

Trinidad and Tobago. Ministry of Education. (2002). *Strategic plan, 2002–2006*. Port of Spain, Trinidad: Author.

Trinidad and Tobago. National Task Force on Education. (1994). *Education policy paper (1993–2003)* (White paper). Port of Spain, Trinidad: Ministry of Education.

Weist, M., Rubin, M., Moore, E., Adelsheim, S., & Wrobel, G. (2007) Mental health screening in schools. *Journal of School Health, 77*(2), 53–58.

World Health Organization. (1996). *The status of school health*. Geneva: Author.

Vamos, S. (2006). *Creating a healthy school using the healthy school report card*. Alexandria, VA: Association for Supervision and Curriculum Development.

School Improvement in Trinidad and Tobago:
A Predictor for the Success of Educational Reform

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Abstract. This paper focuses on school improvement initiatives undertaken by B.Ed. final year students of the School of Education at The University of the West Indies (UWI). St. Augustine, over the period 1999–2007. Against the background of the school improvement literature, the writer's experiences, and the responses to the local form of school improvement by B.Ed. candidates, principals, parents, and students related to schools in which school improvement initiatives were launched, as well as the lack of or the support of the Ministry of Education, the paper submits that very little success, if any, has been achieved by way of educational reform in Trinidad and Tobago. The main conclusion of the paper culminates in a conceptual framework which emphasizes that educational reform in Trinidad and Tobago has not realized its required objectives for the following reasons: (a) educational planners have consistently failed to engage in effective needs analysis and policy evaluation; (b) an anti-intellectual syndrome, characterized by a misunderstanding of the true purpose of education, seems to have overwhelmed most administrators and staff in Trinidad and Tobago schools, resulting in personnel not being able to respond to reforms with the necessary enthusiasm; and (c) principal behaviour tends to be more in keeping with that of "managers" rather than with responses to the imperatives of leadership demanded by today's world. Recommendations are offered to address this malaise, which seems to have the education system in perennial crisis mode.

Introduction

Duke (2007) argues that one person with the right talents, temperament, and training can mobilize the energies of many people to generate school improvement [and educational reform]. However, my experiences as coordinator of school improvement initiatives over the past eight years in several schools in Trinidad and Tobago as well as in St. Vincent and the Grenadines have convinced me that it takes more than one individual, acting as change agent, to turn a school or system around. Indeed, I firmly believe that for schools to benefit from educational reform, they need system support, strong transformational leadership (at central office level, district level, and within the schools themselves), and teachers who are driven by their passion for excellence as well as commitment to their schools, student learning, and their own professional development.

While the concept of school improvement is relatively new to Trinidad and Tobago, the same cannot be said for educational reform. Since 1959, profound efforts have been made to improve education in Trinidad and Tobago. Unfortunately, desired objectives were never fully realized. Some activists suggest that this may be so because global

and societal forces were not comprehensively taken into consideration before implementing reform. Others argue that Trinidad and Tobago has been working at educational reform for decades without attempting to change significantly the culture, organizational structure, and legal and institutional framework of the Ministry of Education (MOE). Still, there are others who claim that we have persistently refused to revisit the long-standing Education Act, Public Service regulations, and other regulations and standing orders that have guided school governance since the 1960s. There are also many who believe that we have failed to inject a purposeful and developmental ideology into all stakeholders in the education system; that we continue to refuse to understand that the Teaching Service Commission and the organizational structure of the MOE need a total overhaul.

Against these observations, this paper argues that Trinidad and Tobago has to revisit its perspectives on, and approaches to, educational reform. While it may be argued that curricula in our schools have been modified, no one can deny that much more can be done and more research can go into this process. Indeed, there is no clear set of data to suggest that Trinidad and Tobago has

been successfully catering for the different levels of student ability in its educational system. Only recently, the Minister of Education revealed a new policy with respect to students who fail to secure more than 30% in the national Secondary Entrance Assessment (SEA) examinations. Such action reveals the flaws in the Ministry's approach to reform. For example, one would have thought that the Ministry would have given much more thought to such a move in terms of the logistics required for success. Principals were not given notice before the decision was taken. Schools are already pressed for space. Where will room be found for additional classes? The programme and teachers' modus operandi will not be changed. So is this not another exercise in frustration for students who have to repeat?

Trinidad and Tobago, because of the rapid changes taking place in the world and our society, must remain interested in educational reform. However, in formulating and implementing reform initiatives, it is important for us to understand that worldwide changes are taking us into a new civilization; that, as a result, educators today must accept the need to continuously improve the structures and processes of education; and that no longer can reform and modernization be guided by ad hoc interventions.

For example, we continue to talk about reviewing our approaches to teacher development, but how scientific and fundamental have they been? To what extent have we been trying to determine where we have gone and are going wrong? Why are so many of our teachers accused of absenteeism and of a lack of professionalism? Why are so many of our school principals wilting under pressure from their staff, students, and parents?

The above problems are further compounded by the emergence since the beginning of the 1980s, at all levels of the education system, of increasing student failure and rampant indiscipline and violence in schools (Campbell, 1992). Given the prevalence of so many ills in its education system, there is no doubt that Trinidad and Tobago must now be concerned with how best it can engage in improving its education system.

Rationale for the Paper

In 1997, the School of Education of The University of the West Indies (UWI), St. Augustine launched a B.Ed. (Administration) degree to help produce educational leaders at the primary school level. This initiative was designed to introduce a new model of reform, which focuses on improving schools from within rather than solely from outside. To date, over 1,000 candidates have graduated from this programme.

An important component of this B.Ed. degree is the practicum, which represents a substantial graduation requirement. Further, it is the climax of a number of courses that were designed to develop competences and provide appropriate attitudes in participants. Unfortunately, 8 years after (2007), little can be shown to demonstrate that this B.Ed. and its related practicum or school improvement projects have impacted meaningfully on schools. From my participant observation perspective and my official capacity as coordinator, it is my considered view that all was and still is not well with the manner in which these school improvement initiatives have been implemented. Even with respect to the type of principals produced, I cannot say that I have been happy with emerging outcomes.

To my mind, there are certain factors responsible for these adverse outcomes. Further, I believe that if we can identify, describe, and explain these factors at the micro level (schools), then it may be possible to explain why over the past five decades educational reform in Trinidad and Tobago has not taken root as our educational planners had envisioned. In other words, I am proposing that if we can understand the dynamics of school improvement in our schools, we can understand the dynamics of education reform at the macro or system level. Indeed, it is only when we understand the dynamics of educational reform at the macro and micro levels that we in Trinidad and Tobago will be able to engage in the successful renewal, restructuring, and modernization of our education system. Finally, it is my hope that this paper will be able to bring new insights to the approaches to educational reform in Trinidad and Tobago and drive home the reality to educational planners and the political directorate that there can be no formula for formulating and implementing educational reform.

Further, I wish to establish that educational reform cannot be imposed on an education system. For success, educational reform must engage in reshaping the culture of the system by way of cultural and not political strategies.

Methodology

The methodology used in this paper was informed by the qualitative research paradigm. With this approach, I used my insight to investigate as a participant observer in the culture of the Trinidad and Tobago education system, using my experiences, which were reinforced by my interaction with a cross-section of past and present practicum candidates, supervisors (of the practicum), principals, teachers, and students related to schools in which school improvement (practicum) projects were conducted, to understand the nature and dynamics of school improvement that the School of Education had introduced into the education system.

Formal research papers, by tradition, highlight specific samples. In this paper I wish not to identify with such an approach. First of all, I was directly involved in preparing the already mentioned graduates and current cohort of 180 candidates for the practicum. Further, over the past 8 years I have visited over 100 schools—urban and rural; primary and secondary—to supervise and second mark practicum projects. The insight gained into the dynamics of school improvement and my conversations with stakeholders have contributed to the production of the brief reports that have helped me to arrive at conclusions and generate recommendations.

In addition, an abridged literature review was undertaken to determine what writers have said and are saying about the nature and dynamics of school improvement and educational reform. Against the findings of what stakeholders have said and what others have written, conclusions and recommendations were made with respect to how school improvement initiatives in Trinidad and Tobago schools can help to predict the success of education reform in the system.

Nature and Dynamics of School Improvement as Reflected in the Literature

We now live in a world characterized by political, economic, social, spiritual, and technological turbulence. Therefore, it should not be difficult to appreciate why it has become so urgent for our cultural institutions—the home, the church, the school, the media, and the arts—to try to help our young people to cope with this growing turbulence and why, worldwide, schools have become the focus of attention. Hargreaves and Hopkins (1994) were particularly clear on this issue. According to them, "there is now considerable pressure on schools to improve on the levels of achievement of students, as unskilled and semi-skilled jobs progressively [tend to] disappear from advanced economies" (p. 2). In Trinidad and Tobago, expectations of the population at large are forcing politicians to increase their demands for schools to become more effective.

Hargreaves and Hopkins (1994, p. 1) also agree that school improvement and educational reform are on the rise. They submit that several types of educational innovations have emerged as a result of the above-mentioned turbulence. These, they submit:

- have been sometimes introduced as required by principals who, although conscious that the extent and pace of change is too high, nevertheless had a duty to implement them;

- have been the product of shifting external political pressure or legal imposition;

- did not have to compete with other innovations since principals expected everyone to be innovating ceaselessly and a wide range of innovations to be implemented simultaneously; and

- were implemented fully and successfully in the short time-scale allowed only in exceptional circumstances.

The literature on school improvement (Fullan, 1992; Harris, 1998; Hopkins & West, 1994; Reynolds, Hopkins, & Stoll, 1993) has become increasingly substantial within the past decade. Harris (2000) believes that there has been an expanding thrust towards educational reform (school improvement) designed to raise school

performance; that, as a result, corresponding expectations have emerged as to how schools should be governed and managed. Harris further observes that in many educational systems—particularly in those of Western countries—governments, by way of their educational policies, have been in the vanguard of the movement. She however laments that these policies have, more often than not, proved counter-productive to innovation and change.

From the above, we may conclude that the literature sees school improvement or whole-school reform as yet another attempt at systemic reform. Also, from the literature we can conclude that successful school improvement requires that learning standards, curriculum, instruction, and assessment be placed at the core of any initiative to improve schools.

Hopkins (2001, as cited in Wrigley, 2006) has also recognized the rise and significance of school improvement. He, however, went on to identify critical characteristics that are important to all forms of school improvement:

- a bottom-up orientation in which improvement is owned by the individual school and its staff

- a qualitative orientation to research method-ology

- a concern with changing organizational processes rather than the outcomes of the school

- a concern to treat educational outcomes as not "given" but problematic

- a concern to see schools as dynamic institutions requiring extended study more than "snapshot" cross-sectional studies

Building on Hopkins's (2001) views, Wrigley (2006) argues that school improvement requires the basic acceptance that schools are complex organizations in which change cannot be effected through the application of isolated interventions.

This reminds us of Saphier and King (1985) who had cautioned that school culture is the foundation of school improvement. They had also reported that school improvement emerges from the confluence of four elements:

- the strengthening of teachers' skills

- the systematic renovation of curriculum

- the improvement of the school as an organization

- the involvement of parents and community members in responsible school-community partnerships

For Saphier and King (1985), these four elements all underlie a school culture that either energizes or undermines them. They further concluded that if school improvement is to occur and have any lasting effects, supporting existing cultural norms that contribute to the growth of the school and building norms where they do not exist become critical. This is so, they argue, because the degree to which these norms are strong can influence the ability of the school improvement activities in the school.

School improvement initiatives have been categorized in the literature as either organic or mechanistic. Indeed, several organic approaches exist. According to advocates of these organic models, any attempts at successful school improvement must emphasize the following prerequisites, which have been categorized into five schools of thought and expressed by different writers to emphasize the imperatives of:

- self-renewal and growth as well as a multi-level perspective

- internal change agents and external support

- research and evaluation

- policy formulation (Hopkins, 1985, 1989)

- a philosophy of inclusion (Comer, 1988; Glickman, 1990; Sizer, 1992)

- school growth planning (Dalin, Rolff, & Kleekamp, 1993; Elmore, 1990; Fullan, 1992; Murphy & Louis, 1994; Stoll & Fink, 1992, 1996)

- development planning (Hargreaves & Hopkins, 1994)

- a capacity conducive to development in the school (Hopkins & Harris (1997)

Mechanistic approaches to school improvement also abound in the literature. According to their proponents, the following groups of objectives and strategies should be included in all school improvement initiatives, if they are to be successful:

- a six-phase approach—goal setting, policy making, planning, preparation, implementation, and evaluation (Caldwell & Spinks, 1988)

- effective training programmes, concentration on a few goals, standard operation procedures, attention to minor details, and rectifying weak links (Reynolds et al., 1996)

- a close focus on classrooms and discrete instructional strategies

- frequent monitoring

- appropriate mechanisms for predicting, with a high degree of accuracy, student outcomes with respect to development and learning

- a multi-level organizational perspective for success (Joyce, Calhoun, & Hopkins, 1997; Joyce & Weil, 1996; Slavin, Madden, Karweit, Dolan, & Wasik, 1992).

In 1996, Barber and Dann had pointed out that while there was a flurry of activity with respect to school improvement, little was being done about understanding ineffective or failing schools. Chapman and Harris (2004) later responded with the theme "improving schools facing challenging circumstances."

As a result, strategies identified by the research for improving schools now include:

- improving the environment in which these schools operate

- generating positive relationships in them

- focusing more on teaching and learning

- building and forming more meaningful relationships with the outside community—particularly with families and local businesses

- promoting and sustaining continuous professional development for staff

- building effective leadership teams in the school so that morale can be enhanced, and performance sustained over time

- recognizing the importance of instructional leadership

- recognizing the importance of and ensuring external support, which can help schools maintain the momentum of change and

- provide professional development, help with data analysis, and much needed early support

- making use of data with respect to decision making, determining whether initiatives are working, and the views of staff and students

Within recent times, a new consensus on school improvement (generated by federal policies that mandate that no child should be left behind in public schools) emerged in the United States (US) to champion the need for strong district leadership in bringing about successful school improvement (Archer, 2007).

Many experts, as reported by Archer (2007), see this growing demand for assertiveness among district leaders as a natural consequence of the movement for higher academic standards that has dominated education policymaking in the US over the past decade. Archer noted that the cry was that it was too much to presume that every school has within it the capacity to bring its students to the levels of achievement now demanded of them. As a result, the intervention of districts has become extremely critical.

However, according to Archer (2007), Michael Fullan, an expert on school system management at the University of Toronto, cautions that districts must be careful with their interventions, since finding the right balance between central authority and site-based autonomy is always problematic. For Fullan, ownership of a common vision of instruction is always vital (Archer). Listen to Fullan's own words, as reported by Archer: "If you're too loose, you don't get the focus, but if you're too focused, you get prescription, and narrowness, and rebellion. The holy grail of school reform on a large scale is large-scale ownership" (Archer, 2007).

In addition to the above findings, I have been inspired by Duke (2007) to appreciate the following critical themes for school improvement:

1. There can be no substitute for leadership when it comes to school improvement.

2. School improvement cannot be successful without an understanding of literacy and how to correct and promote it.

3. All changes in the school must be closely monitored to determine whether they are addressing what they are intended to improve.

4. Principals must be willing and determined to manage the required changes to bring about successful school improvement.

5. School improvement requires principals and change agents who address personnel problems and make correct use of the qualifications, aptitudes, and talents of staff.

6. School cultures are different. What works for one school may not necessarily work for another.

I have also been touched by Catherine Gewertz (2005), who shared the following on successful school improvement:

1. School improvement can be considerably empowered by overhauling the curriculum; providing training for teachers in teaching it; directing more help to schools; and improving the hiring, development, and support functions for all employees.

2. Personnel at schools undergoing improvement should be required to develop and implement individual improvement plans. In addition, much support and growth opportunities should be made available; those who have not been able to grow should be advised out of the system.

3. Knowledgeable and professional union cooperation must be sought at all times.

4. School improvement cannot really get of the ground without heavy investment in staff, the right supports, a collaborative approach that recognizes how complex a process teaching can be, and a strong commitment to work on the part of staff.

Finally, it is important that I now bring my survey of what writers have contributed to the research on school improvement to an end. Perhaps this may be best done by reference to some insights to school improvement provided by Wrigley (2006, p. 287), who submits that school improvement is more likely to be more effective when we:

- begin to look at schools as communities within wider communities, and when we recognize the dynamics on the transition of young people who move daily between these different cultures;

- draw on sociology to understand the experiences, enculturation, and resistance to change that school improvement brings to our administrators, teachers, students, and even parents;

- take account of a much wider range of pedagogical and sociological literature in order to extricate ourselves from a narrow approach to school governance;

- engage in more sophisticated and critical forms of qualitative enquiry, and draw on traditions of ethnography and social phenomenology;

- develop a stronger understanding of the implications of economic, social, and cultural change for schooling;

- give prominence to the ethical and political implications of different forms of school organization and conflicting models of change, and engage in debate about curricular aims rooted in a commitment to democracy and social justice.

School Improvement in Trinidad and Tobago

As indicated earlier, the School of Education introduced its concept of school improvement in 1997 by way of a practicum project. This concept was fathered by Dr. Ewart Taylor, former Lecturer in Educational Administration at the School, and later developed and sustained by Arthur Joseph and Raymond S. Hackett, students of and successors to Dr. Taylor.

This local version of school improvement is built on the following pillars:

- the assumptions that all courses and experiences in the B.Ed. will contribute to the conceptualization, formulation, and implementation of the practicum

- a proposal in which students outline what issues and problems they intend to address and how they intend to improve them

- how what is to be developed was identified and clarified
- the different types of interventions (whole-school, interdepartmental, individual) to be made and in how many sessions

The practicum is normally expected to be implemented in 12 sessions over 3 months. A force field analysis helps to identify the main problems of the school. The most pressing, as identified by staff, is then selected for treatment. Contrary to the practice of students, school improvement really should be ongoing so that all problems identified can be addressed. The 3-month period is suggested only for examination and evaluation purposes.

The school improvement initiative involved the selection and use of a focus group, which acts as a brainstorming committee to help the change agent identify ways and means in which the school's culture can be turned around to improve the school and institutionalize gains from the practicum. This focus group is usually made up of the principal, senior teachers, other teachers, parents, students, and other significant persons in the community.

Recommendations with respect to implementation, monitoring, evaluation, and institutionalization from the focus group are taken to the staff of the school to be ratified and converted into a development and action plan.

A Summary of Stakeholder Perceptions on the Practicum

Central office and school district officials, principals, vice-principals, teachers, students, and parents constitute the education system of Trinidad and Tobago. It is for this reason that the following brief reports on stakeholder perception on the practicum have been prepared.

Central Office Officials

The School of Education, UWI, delivered for the Ministry of Education, through a World Bank loan, the B.Ed. (Administration) degree. The intent was to create a cadre of 500 primary school administrators in 5 years, who would have helped to generate greater effectiveness in the primary school system. Unfortunately, having commissioned the School of Education to train and develop these 500 participants, the Ministry did little to ensure that they were optimally supported and allocated. To date, many graduates have not been placed in leadership positions. Perhaps what is worse, not all who were admitted into the programme were psychologically and professionally suited for leadership. Indeed, some of these were even made principals, with undesirable consequences.

In the minds of many, the central office erred by failing to sensitize principals, in particular, and other stakeholders in general, about the relevance and importance of this new approach to providing school leadership. Even when the School of Education made attempts to have the Ministry run workshops that could have helped principals to understand the imperatives of the programme and their roles in it, nothing was done. As a result, situations emerged in which practicum projects were run in schools in the face of total indifference from principals and staff. Alarmingly, in some cases, principals did not even bother to participate in a single session.

School District Officials

Many school district officials turned a blind eye to practicum projects. Few displayed interest in what was taking place. Some even talked disparagingly about the project. As far as the evidence at my disposal goes, I cannot positively identify many officials who willingly and officially supported the projects. Clearly, the culture of school improvement was not fully alive at the district level.

Principals

School improvement in 2007 is still not as vibrant as it should be. Reports emerging about the support and behaviour of principals have not been encouraging. Generally, they have been depressing—even with respect to those principals who have graduated from the programme. Twelve sessions were a minimum requirement for conducting the School of Education practicum projects. Projects needed at least 1½ hours to be meaningful. The evidence shows that most principals found the sessions too time consuming and disruptive. Few wanted to invest time in

successful school improvement. Many saw these sessions as beneficial only to the practicum candidates and not to the school, its teachers, and students. Reports have identified principals who deliberately made attempts to frustrate practicum candidates. One principal is on record as having said that he had no time for school improvement; that his school was already doing well in the SEA examination. Another is known to have said that she had no intentions of supporting the foreign-driven initiatives of the School of Education.

The general perceptions coming from practicum candidates who did not obtain desired support is that principals did not collaborate with them because they felt threatened by the new approach to instructional leadership and school leadership displayed by these candidates.

Teachers

For some teachers (few in number), the practicum is an exciting experience. These teachers are thrilled by the opportunity to engage in liberalizing educational discussion and empowerment.

For most teachers, the practicum is yet another attempt to interfere with their comfort zones. Indeed, the practicum has emphasized and highlighted the anti-intellectual syndrome that prevails among teachers in our primary schools. Most tend to operate as technicians rather than as intellectuals. Few teachers demonstrated a commitment to their own professional development and therefore saw no benefits emerging from the practicum for them.

Generally, few teachers saw the practicum as an initiative to bring about positive change in the school. Instead, they saw it as a way for practicum candidates to acquire more qualifications for occupational mobility. This perception made it more difficult for practicum candidates to obtain their support.

What Practicum Candidates Say

What Made the Practicum Easy

Practicum candidates reported on the following themes: (a) what made the practicum easy, (b) what made the practicum challenging, (c) the

problems that emerged from the practicum, and (d) their general views on the practicum.

For most candidates, the practicum project was made less challenging because of the support groups they had in the school. In many instances, good relationships with parents helped. Some candidates found comfort in the many individuals who provided advice, information, and assistance in the preparation for practicum sessions.

What Made the Practicum Challenging

From discussion with the many candidates with whom I interacted, 60% confirmed that they had received no help from their principals and peers, while only 40% reported that they had received assistance and encouragement. Generally, difficulties emerged because of the lack of support from principals, staff members; inappropriate venues for focus groups to meet; time constraints for conducting focus group meetings; and the uncooperative attitude of some supervisors who seemed not to know their role in the practicum and who did not provide desired guidance, giving negative feedback or no feedback at all. Some candidates lamented that some supervisors had little or no compassion for them and the challenges they faced. Many candidates reported that they had great difficulty in assembling their focus group and even in finding a suitable location for them.

Finally, I submit the following as a personal comment. In all practicum projects—past and present—even if it was mentioned in preparing candidates for the practicum, no candidate was able to take recommendations generated and place them in a development plan for the school. Most candidates were preoccupied with interaction with the focus group. Rarely did they look ahead to life in the school after the practicum. They were simply concerned with getting over the whole business of the practicum. Further, to a great extent, not much thought was given to how teachers in the school, students, and parents could be brought on board to promote greater student learning in the school.

Students and Parents

Most, if not all, students and parents with whom I interacted found the practicum sessions stimulating and exciting. Above all, they were

happy with the attention and empowerment they enjoyed in these sessions. I was amazed at how varied and how rational the views of students and parents were. In no instance did I find either students or parents intimidated by the presence of teachers, supervisors, or other significant stakeholders.

Conclusions and Recommendations

The general conclusions that can be made from the reports highlighted above are:

1. All is not well with the approach to school improvement in Trinidad and Tobago. It has not made a significant impact on school effectiveness in general, and on student learning and academic achievement in particular.

2. School improvement in Trinidad and Tobago has not been found to place strong emphasis on pedagogical issues and professional development.

3. School improvement in Trinidad and Tobago has not been found to be linked with development planning.

4. Most principals and staff have not demonstrated the necessary determination and capacity to engage meaningfully in school improvement.

5. Finding suitable venues in the school and time for conducting practicum sessions have proved to be problematic for practicum candidates.

6. Most practicum candidates have not benefited from system support and internal school support other than those who have enjoyed personal school support from their friends.

7. Practicum supervisors, in some instances, have not lived up to the expectations of their candidates and have not displayed the necessary attitudes and professionalism needed for helping candidates to develop.

8. Students and parents have been found to play significant and encouraging roles in the practicum of B.Ed.candidates.

Against the above conclusions, the following recommendations are made:

1. Given the perceptions and testimonies of practicum candidates, it is imperative that the School of Education revisit the practicum component for final year B.Ed. students as soon as possible, taking into consideration the issues raised in this paper and conducting its own investigation into the problem.

2. For a more meaningful practicum component, the School of Education has to form a strategic alliance with the Ministry of Education. Through this alliance, it is hoped that the School of Education will be able to persuade the Ministry of Education to sensitize its principals and teachers on the need to support practicum candidates involved in practicum initiatives, and also demonstrate to principals and teachers, through workshops, how practicum initiatives can benefit the administration and staff in particular and the school in general.

3. The School of Education has to generate greater quality assurance and guidance in supervising and developing its practicum supervisors. Training for practicum sessions is therefore critical.

Conclusion

This paper started by proposing that school improvement could be used as a means for evaluating the success of educational reform initiatives in Trinidad and Tobago. The assumption was that if we can understand the factors facilitating or inhibiting school improvement, then we would be able to understand the dynamics of educational reform.

If we accept the findings and recommendations as submitted in this paper, then it should not be difficult to appreciate that educational reform in Trinidad and Tobago cannot be successful if we continue to view it as the teachers and administrators in this paper have been described as viewing it. On the other hand, it clearly cannot be viewed as a process that can be introduced, promoted, and institutionalized by applying or invoking formulae, fiat, and mandates.

The evidence cogently suggests that macro approaches such as policy decisions by the political directorate and Ministry of Education cannot work by themselves. Reform has to be a participative and ideological process. To achieve this, the Ministry of Education has to find ways and means to sensitize its consultants, officials at central office, district offices, principals, teachers, students, and parents to the imperatives and outcomes of educational reform. In addition, meaningful ongoing professional development on site will have to be an imperative.

This paper suggests that educational reform, like the practicum, has to pay more attention to analysing, monitoring, evaluating, and institutionalizing reform initiatives. Trinidad and Tobago, in pursuing educational reform, must do so after meeting all stakeholders and after a development plan or strategic plan has been drawn up from recommendations based on stakeholder interaction. The time has long gone for the imposition of mechanistic and authoritarian mandate on educational reform.

Yes, indeed! Insights gained from this paper certainly suggest that school improvement in Trinidad and Tobago has not fully complied with agreed trends in the literature on school improvement. Furthermore, clear explanations have been induced as to why schools in which practicum projects were conducted have not been able to improve. A final word on the matter suggests that serious barriers to educational reform in Trinidad and Tobago include:

➢ failure to be guided by the trends of educational reform in the research literature

➢ the nature and dynamics of the culture of the Ministry of Education

➢ failure on the part of the Ministry of Education to establish a quality assurance and professional development unit (provided with the necessary autonomy and empowerment as well as resources) to regulate, monitor, and evaluate all educational reform initiatives in the education system

➢ the nature and dynamics of national school cultures

➢ the absence of a spontaneous collaboration and a professional team spirit among staff in the primary schools of Trinidad and Tobago

➢ the quality and character of system and school leadership in Trinidad and Tobago

➢ the lack of teachers' commitment to supporting school improvement initiatives by their colleagues

➢ the anti-intellectual syndrome that is so characteristic of teachers in Trinidad and Tobago.

There is no doubt that Trinidad and Tobago cannot delay in taking the necessary action to correct the ills of educational reform. There is no alternative. We must take action now. A new think-tank along the structure (but wider in scope) of focus groups of the practicum promoted by the School of Education must be commissioned to consider and implement all aspects of school reform. This think-tank must include all stakeholders in the education system.

References

Archer, J. (2007, September 14). Theory of action: The idea that schools can improve on their own gives way to a focus on effective district leadership. *Education Week*, pp. S3–S5

Barber, M., & Dann, R. (Eds). (1996). *Raising educational standards in inner cities*. London: Cassell.

Caldwell, B., & Spinks, J. (1988). *The self-managing school*. London: Falmer Press.

Campbell, C. C. (1992). *Colony and nation: A short history of education in Trinidad and Tobago, 1834–1986*. Kingston, Jamaica: Ian Randle.

Chapman, C., & Harris, A. (2004). Improving schools in difficult and challenging contexts: Strategies for improvement. *Educational Research, 46*(3), 219–228.

Comer, J. (1988, November). Educating poor minority children. *Scientific American*, pp. 42–48.

Dalin, P., Rolff, H. G., & Kleekamp, B. (1993). *Changing the school culture*. London: Cassell.

Duke, D. (2007, February 21). Turning schools around: What we are learning about the process, and those who do it. *Education Week*, p. 35.

Elmore, R. (1990). *Restructuring schools: The next generation of educational reform*. San Francsico, CA: Jossey-Bass.

Fullan, M. (1992). *Successful school improvement*. Buckingham, UK: Open University Press.

Gewertz, C. (2005, August 10) Staff investment pays dividends in Md. District. *Education Week*, pp. 1–16.

Glickman, C. (1990). Pushing school reforms to a new edge: The seven ironies of school improvement. *Phi Delta Kappan*, *72*(1), 68–75.

Hargreaves, D. H., & Hopkins, D. (Eds.). (1994). *Development planning for school improvement*. London: Cassell.

Harris, A. (1998). Improving the effective department: Strategies for growth and development. *Education Management and Administration*, *26*(3), 269–278.

Harris, A (2000). What works in school improvement? Lessons from the field and future directions. *Educational Research, 42*(1), 1–11

Hopkins, D. (1985). *School-based review for school improvement*. Leuven, Belgium: ACCO.

Hopkins, D. (1989). *Evaluation for school development.* Milton Keynes, UK: Open University Press.

Hopkins, D., & Harris, A. (1997). Improving the quality of education for all. *Support for Learning*, *12*(4), 147–151.

Hopkins, D., & West, M. (1994). Teacher development and school improvement. In D. Walling (Ed.), *Teachers as leaders* (pp. 179–199). Bloomington, IN: Phi Delta Kappan.

Joyce, B., Calhoun, E., & Hopkins, D. (1997). *Models of learning: Tools for teaching*. Buckingham, UK: Open University Press.

Joyce, B., & Weil, M. (1996). *Models of teaching* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Murphy, J., & Louis, K. (1994). *Reshaping the principalship: Insights from transformational reform efforts*. Thousand Oaks, CA: Crown Press.

Reynolds, D., Bollen, D., Creemers, B., Hopkins, D., Stoll, L., & Lagerweij, N. (Eds.). (1996). *Making good schools: Linking school effectiveness and school improvement*. London: Routledge.

Reynolds, D., Hopkins, D., & Stoll, L. (1993). Linking school effectiveness, knowledge and school improvement practice: Towards a synergy. *School Effectiveness and School Improvement*, *4*(1), 37–58.

Saphier, J., & King, M. (1985). Good seeds grow in strong cultures. *Educational Leadership*, *42*(6), 67–74.

Sizer, T. (1992). *Horace's school: Redesigning the American high school*. New York: Houghton Mifflin.

Slavin, R., Madden, N. A., Karweit, N., Dolan, L., & Wasik, B. (1992). *Success for all: A relentless approach to prevention and early intervention in elementary schools*. Arlington, VA: Educational Research Service.

Stoll, L., & Fink, D. (1992). Effecting school change: The Halton approach. *School Effectiveness and School Improvement*, *3*(1), 19–41.

Stoll, L., & Fink, D., (1996). *Changing our schools: Linking school effectiveness and school improvement*. Buckingham, UK: Open University Press.

Wrigley, T. (2006). Schools and poverty: Questioning the effectiveness and improvement paradigms. *Improving Schools, 9*(3), 273–290.

Lessons from the Transformation of the Jamaican Education System

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Abstract. This paper presents an overview of the implementation of the transformation of the Jamaican public education system, by identifying some of the challenges faced and successes realized since the Education Transformation Team (ETT) was established in April 2005. Armed with 133 goals, objectives, and activities, the ETT was charged with the responsibility of providing the leadership for the transformation process. The six areas identified for transformation were (a) Curriculum, Teaching and Learning; (b) Governance and Management; (c) Facilities and Infrastructure; (d) Stakeholder Participation; (e) Finance; and (f) Behaviour Transformation. The challenges faced thus far include mobilizing the necessary funding to support the programme, implementing a structure that will ensure transparency and independence, involving critical stakeholders in the process, and pursuing those goals that will have a significant impact on expected outcomes. Areas of definite progress include the rehabilitation of the infrastructure and the creation of the broad organizational framework for the devolution of power from the Ministry of Education to regional authorities. Based on the experience of the transformation process thus far, the paper advances recommendations and alternative approaches that could assist other regional states to avoid pitfalls in the transformation of their education systems. The evaluation of the transformation process after 20 months of implementation in Jamaica would also benefit from the issues discussed and positions advanced.

Introduction

General Overview

Following a general outcry from businesses, educators, and other concerned citizens regarding the quality of the Jamaican education system, the Prime Minister of Jamaica appointed a Task Force on Educational Reform, in February 2004, to review the system. The main charge given to the Task Force was the preparation of an action plan consistent with the vision for establishing a world-class education system. The report of the Task Force, *A Transformed Education System* (Jamaica. Task Force on Educational Reform [Task Force], 2004) highlighted the main weaknesses of the education system and made far-reaching recommendations to improve the overall performance of the system. Fifteen areas were identified for intervention, including institutional arrangements, curriculum development and implementation, performance assessment at all levels, stakeholder participation, and anti-social behaviour. The Task Force report (2004) also gave significant attention to the areas of facilities and infrastructure. These included access to schools,

school capacity, and the conditions of the physical plant. The issue of the upgrading of the physical plant was linked to the need to provide adequate administrative facilities, better ventilation and lighting, adequate water supply, and proper sanitary facilities. Further, the facilities for play and co-curricular activities were not currently provided in many public and private schools.

Modernization of the Public Sector

In September 2002, Ministry Paper #56, *Public Sector Modernization: Vision and Strategy, 2002–2012*, was tabled in the Parliament of Jamaica, outlining the policy, vision, and strategy for public sector modernization. Commenting on the nature and type of public sector that is envisioned for Jamaica, the Public Sector Reform Unit (Jamaica. Public Sector Reform Unit [PSRU], 2003) report indicated that:

> A strong and professionally functioning public sector holds a country together. It is the bridge between political representation of national aspirations and individual needs on the one hand, and the life experiences of all citizens on the other. It translates visions

and needs into policy, policy into programmes and objectives, objectives into goals, goals into action, and action into results that should matter to people and meet the needs of the country. (p. 7)

The Task Force on Educational Reform report (2004) sought to establish the framework, articulate the strategic direction, and make recommendations for the transformation of the education system consistent with the goals for the modernization of the public sector. The education policy that guided the Ministry of Education and Youth (MOE&Y) before the implementation of the transformation process was articulated in the document entitled *Education: The Way Upward, 2012* (Jamaica. Ministry of Education, Youth and Culture [MOE&Y], 2001). It detailed the main objectives to be achieved through modernization and transformation of the system, including that of optimizing the effectiveness and efficiency of staff

in all aspects of the services in order to secure continuous improvement in performance.

Targets for Achieving Task Force Goals and Objectives by 2015

The Task Force on Educational Reform (2004) identified a number of objectives, related measures, and performance targets that should be achieved by 2015 (see Table 1). These targets were arrived at as a result of a collaborative process between the National Task Force on Educational Reform and the Transformation of Education Steering Committee. The achievement of these objectives and targets would signal to the country that the performance of the education system is at a level comparable to any other developing country. The following performance targets have been identified by the Task Force report (2004) to be achieved by 2015.

Table 1. Performance Targets to be Achieved by 2015

Objectives	Measures	2015 Targets
To attain high levels of educational outcomes	Percent of children achieving mastery in all four areas of Grade 1 Readiness inventory	90%
	Percent of children achieving mastery on the Grade 4 Literacy Test	85%
	National mean score at GSAT for each subject	85%
	Percent of cohort attaining Grades 1–3 in 5 CSEC subjects, including English and Mathematics	60%
Citizens committed to lifelong learning	Percent of citizens enrolled in tertiary and post-secondary institutions, by age group	50%
Citizens equipped with competencies to compete globally	Percent working-age citizens (25 years and over) achieving internationally recognized and portable certification—diplomas, certificates, and degrees	100%
To have learners realizing their potential	Percent of primary schools providing at least • 4 co-curricular	100%
	• 8 curricular activities	100%
	Percent of children in at least 2 co-curricular activities (one of which must be community service)	100%

(Reproduced from the Report of the Task Force on Educational Reform, *Jamaica: A Transformed Education System*, 2004)

Implementation Mechanism for Transformation

Role and Responsibility of the Education Transformation Team (ETT)

The Task Force report on Educational Reform (2004) stipulated that the primary role of the ETT would be to lead the restructuring and transformation of the education system. Specifically, the ETT was charged with the responsibility of implementing the Task Force's recommendations, incorporating the changes at the MOE&Y and supporting institutions in carrying out the day-to-day operations of the education system. The MOE&Y and the associate institutions would continue to support the institutions of learning even while the transformation was being implemented. In emphasizing the commanding role of the ETT, the Task Force report indicated that it must have the highest level of support and authority in order to implement changes quickly.

Work Streams and Change Teams Collaboration

The work of the ETT is being implemented through six Work Streams, each headed by a Work-Stream Lead. The Work Streams are as follows:

1. Facilities and Infrastructure
2. Curriculum, Teaching and Learning
3. Governance and Management
4. Stakeholder Participation
5. Behaviour Transformation
6. Finance

These Work Streams are responsible for leading the design, development, and implementation of the 133 recommendations published in the report of the Task Force on Educational Reform (2004). In order to ensure a smooth and seamless implementation of the recommendations, the MOE&Y established a comparable number of Change Teams. Each ETT Work-Stream Lead either co-chairs or participates as a member of a Change Team. The Facilities and Infrastructure Work Stream was the first joint team to become operational, and it has led the way in establishing an effective modus operandi for collaborating in transformation process.

Achievements of the ETT Since its Inception

Governance and Management

Assessment of the state of the area. The existing structure of the education system was too centralized under the MOE&Y and, therefore, the schools had minimum control over the affairs of the education process they managed. The Task Force report (2004) described the MOE&Y as "a hierarchical, highly centralized and bureaucratic organization despite efforts to decentralize through the establishment of regional authorities" (p. 34). Some of the specific deficiencies included (a) lack of accountability for performance, (b) lack of financial accountability throughout the system, (c) ineffective instructional management of teaching and learning, and (d) ineffective organization of teachers and administrators to respond to the needs of the children.

Recommended actions. The actions recommended by the Task Force on Educational Reform (2004) included (a) strengthening governance and management at the school level; (b) establishing regional education authorities; (c) restructuring the role of the existing institutions that support the education system and establishing appropriate ones; and (d) restructuring the MOE&Y to perform core functions, which include policy development, information and communication, financial audit, and projects.

Achievements to date. A major evaluation was conducted by an overseas consultancy firm to determine the requirements for the effective decentralization of the education system. Among the recommendations was the creation of six Regional Educational Centres. The MOE&Y is in the process of recruiting Chief Executive Officers to assume responsibility for these entities. The main difference between the existing regional offices and the regional centres is their legal authority to employ staff and to disburse funds without the constraints of the MOE&Y.

At the school level, the training of principals is being enhanced with the development of

supplementary modules, which include units in (a) participatory planning techniques, (b) database improvement planning, (c) safety and security management, (d) performance management implementation, and (e) financial management and reporting, among others. A tiered licensing system, along with a career development pathway programme, is also being developed by the ETT for implementation.

Curriculum, Teaching and Learning

Assessment of the state of the area. The Task Force report (2004) identified chronic underachievement of students as one of the main problems of the education system. The dismal performance is symptomatic of the whole public education system, which is driven by a deliberate policy of the system to promote children based mainly on age/grade criteria and not on their level of preparation and performance at each grade level. (What is also significant at all levels of the education system is that girls outperform boys.) The academic performance of the children provides the evidence of an education system in crisis. The Task Force report (2004) indicated that:

1. Only 31% of the children achieve mastery on the Grade I Readiness Inventory, which represents 63% of the males and 74% of the females who were assessed.

2. For those children completing the Grade 3 Diagnostic Test, a mere 14% mastered all the language concepts and 4% showed mastery in all the mathematic concepts. This represents 28% of the male students and 43% of the female students who were assessed.

3. In relation to the Grade 4 Literacy Test, only 57% of the children demonstrated mastery. This represents 45% of the males and 70% of the females who were assessed.

4. For those sitting the Grade Six Achievement Test (GSAT), the performance ranged from a high of 67% in the communication tasks to a low of 48% in the mathematics and science tasks. The males comprise 45% and the females 51% of the students who were assessed.

5. In the Caribbean Secondary Education Certificate (CSEC) examinations, 16% of the cohort successfully completed mathematics and 25% passed English language. This comprises 35% males and 30% females in mathematics, and 40% males and 53% females in English language, of the students who were assessed.

In addition to the issue of poor academic performance, the Task Force report (2004) was critical of the school curriculum, which lacks articulation at the important levels of the system, thus failing to provide the foundation for the learner to progress to the next level of the education system. Insufficient standards for performance and a lack of developmental educational assessment were also seen as part of the weakness of the education system.

Recommended actions. The Task Force (2004) made recommendations that span curriculum teaching and learning support, curriculum development, and curriculum implementation. To deal with the issue of literacy, the Task Force report (2004) recommended the implementation of literacy remediation, which involves the provision of staff support, determining students' remediation needs, and launching a public awareness campaign. Further, the report outlined the implementation of programmatic activities, specifically to address the learning needs of the students.

For the curriculum, the recommendations included the need to develop a policy to guide the revision of the curriculum, with a focus on cross-curricular themes such as environment, gender, and other relevant issues that span subject disciplines. The need to redesign the curriculum to ensure articulation across all levels of the education system was also recommended.

The recommendations related to the implementation of the curriculum call for the training of principals to provide for leadership in schools for effective implementation, monitoring of the implementation of the curriculum, the standardization of the physical facilities to support effective teaching and learning, and the revamping of the class loading and the multiple school types and levels.

Achievements to date. The two main activities being pursued are (a) the implementation of the Caribbean Centre of Excellence for Teacher Training (CETT) programme, and (b) the creation of a structure to support the literacy programme. The Caribbean CETT programme targets Grades 1 to 3. A submission by Miller (2006) explained that "the rationale of this approach is that if all students learn to read by the end of Grade 3 then given the pervasive importance of reading to all subjects of the primary curriculum, there should be general improvement in the overall quality of primary education" (p. 6). The Caribbean CETT programme has been established in 86 schools, including 43 in Jamaica. For the purpose of the transformation of the Jamaican education system, 100 schools are being targeted and implementation should commence by September 2007.

The second major intervention is the establishment of a structure to support the literacy campaign. A national coordinator is being engaged to oversee the implementation of all aspects of the literacy programme. This person will supervise both regional and school coordinators to ensure that set targets are met. Literacy specialists are currently being deployed in the targeted schools.

Facilities and Infrastructure

Assessment of the state of the area. The 2004 Task Force report on the public education system highlighted the deficiencies in the physical state of the schools and the conditions under which teaching and learning occurred. One important limitation was the need to increase the unit space per student in line with UNESCO's recommended standard of 14 ft 2 in, up from 10 ft 2 in. The issue of adequate space was a necessary concern because of the need to facilitate the new approaches and methodologies being used in the learning environment. In addition, the report identified (a) massive overcrowding in schools, especially in the urban areas; and (b) the continued presence of the shift system, which among other problems reduces the teaching time for whole-day school. The KPMG report (1998) highlighted some of the specific limitations of the school facilities as indicated in the 1996 Census:

- 20% of school buildings needed major repairs and a further 38% were in need of minor repairs.

- Less than 50% of schools had adequate toilet facilities for students.

- Nearly 20% of pupils needed seating and a writing surface.

- Schools required specialist facilities such as science laboratories, libraries, and secure computer laboratories and storage facilities.

Recommended actions. The recommendations by the Task Force (2004) include the rehabilitation of existing school facilities to international standards, which should be supported by a comprehensive preventive and corrective maintenance programme for the school plants. The need to involve the private sector in the rehabilitation of the school plant was also recommended. The rationalization of the school system by creating two school types—primary and secondary—thus eliminating all-age, primary, and junior high schools, was also recommended. In addition, the space capacity should be created to provide 13 years of schooling, by starting with the 5-year-olds at the front end of the system and completing high school at Grade 12.

Achievements to date. In order to manage the building construction activities effectively, five new project managers were employed by the Ministry of Education and assigned five schools each. These included new schools under construction and/or schools being expanded. The construction activities included the building of new schools, rehabilitation of existing schools, construction of prototypes (which are temporary structures), and the expansion of existing schools.

- Repairs of critical schools – Over 500 schools were identified as having significant repair and maintenance problems. As of December 2006, 276 of the 295 schools identified for repairs in 2005/06 were completed. For 2007, 300 additional schools have been identified for repairs, of which 82 of 151 have so far been contracted for the new academic year.

- Furniture construction – Complementing the repairs and maintenance programme was the construction of furniture for those schools that

were experiencing a shortage. To date, 136 contracts have been awarded costing J$428 million and 122,000 units of furniture were delivered to schools island-wide. (The furniture includes desks and chairs for all types of schools.) All the furniture was constructed by local manufacturers and, in fact, many of them were small manufacturers.

- Planned and ongoing activities – 18,000 new school spaces are being provided at a cost of J$3.2 billion. This number includes the expansion of 10 schools and the construction of 8 new schools. Sixteen "prototype" schools have already been completed and there are five additional ones at various stages of the construction process. In addition, a comprehensive audit to determine the condition of each school was completed. The audit involved 997 of the 1,010 public schools now existing in Jamaica. The result of this exercise will assist with the development of the preventive and corrective maintenance programme for the school system. Further, the Building and General Facilities Standards (which are required to maintain agreed standards in the rehabilitation and construction of new buildings) are at the point of general review by key stakeholders.

- Space audit for overall education system – The space audit was conducted during 2005 to determine how to rationalize the use of existing spaces, and to establish the number of new spaces required to satisfy the parameters for learning facilities. The Task Force on Educational Reform (2004) outlined the following parameters for classroom size for the three levels of schools:

  ➢ Secondary schools—moving from a class size of 45 to 25

  ➢ Primary schools—moving from a class size of 35 to 30

  ➢ Early childhood—moving from a class size of 30 to 20

Based on the new Task Force parameters, the audit showed a projected net space requirement of over 400,000 to satisfy both the primary and secondary school system by 2009/2010. If existing parameters were applied, a net total space requirement of 116,000 would be required for the same period. The audit also showed that the equivalence of 498 schools, which would include 177 secondary schools and 321 primary schools of various sizes, would be needed, based on the new parameters. If the existing parameters were applied, with elimination of the shift system, 162 new primary and secondary schools would be needed. Table 2 provides a basic proposal of the actions to be taken in order to achieve some of the major objectives of the Task Force report on the space needs requirements of the school system.

Stakeholder Participation

Assessment of the state of the area. The role of the student as a participant in the process of education as against being the object of education was raised as a serious concern. In fact, the involvement of students in the education process has been limited. One reason identified is that the school system has not provided the support that will assist in strengthening students' participation in the education process.

The Task Force report (2004) indicated that only a minority of parents were involved in the education of their children or the life of the schools, even though they spent at least 60% as much as the Government on their children's education. Even though Parent Teacher Associations (PTAs) are present in most schools, their role has been limited to fund-raising activities to supplement the operation of the schools. Further, while the private sector, alumni, churches, and community organizations are seen as stakeholders that play some role in the running of the schools, their involvement is not treated as crucial for the restructuring of the education system.

Recommendations for action. The establishment of a national student council system at secondary and tertiary level schools, with adequate institutional support, was recommended. Further, it was recommended that students should participate in the evaluation of teachers and

principals. Standardized scores that measure schools' performance in academic and non-academic areas should be developed, and the results made public to the school community each year.

Another central recommendation was the establishment of PTAs where none existed before, and the launch of a national PTA to ensure that parental involvement is at a much greater level in the school system. The restart and promotion of the parent month during November of each year was proposed by the Task Force report (2004). The school-parent-child contracts, which would allow parents and teachers to take a planned approach to the education of children, coupled with the implementation of a voluntary homework/extend time programme working in partnership with the school community, are recommendations that seek to take a broad stake-holder approach to the development of the learner.

Table 2. Proposed Action to Address Critical Space Issues

Task Force Goals	Primary Schools	Secondary Schools	Date
Eliminate shift system	24,000 spaces needed to eliminate shift system	42,000 spaces needed to eliminate shift system	03/06–08/08
Rationalize the use of existing spaces	69 schools identified for merger, closure, or converting to early childhood facilities Students moving within clusters of schools with excess spaces—24 clusters of schools identified Students moving among clusters of schools with excess spaces—23 clusters of schools identified		01/06–08/08 01/06–08/07
Convert PJH to primary and secondary schools	87 PJH to be converted to primary schools	1 PJH to be converted to secondary school	04/06–08/08
Create 2 school types: primary and secondary	Provide 12,000 secondary spaces to accommodate displaced Grades 7–9 for A/A schools Provide 14,000 primary spaces to accommodate displaced Grades 1–6 from PJH schools		 09/06–08/10
Add 5-year-olds at the front end of the primary system and Grade 12 at the back end of the secondary system	52,600 additional spaces required	52,700 additional spaces required	01/08–12/11
Achieve Task Force-stipulated class size	20/class	25/class	01/12–12/17

(Taken from the Presentation to MOE&Y Policy Committee meeting by Hutton, 2005)

Achievements to date. In recognition of the role of the stakeholder and, in particular, the role of the parent in the achievements in student performance, a national PTA was launched during 2006. This body will provide leadership for the initiatives related to the parent support for the transformation of the education system.

Finance

Assessment of the state of the area. Although the Jamaican Government spends in excess of 6% of its Gross Domestic Product (GDP) on education, which exceeds the expenditure of most developing countries, it falls behind Trinidad and Tobago and Barbados in the expenditure per child at each level of the public education system. Based on both the education and economic performance of the other two leading countries in CARICOM, the Task Force report (2004) concluded that there seemed to be a direct relationship between the level of funding of the education system and the education and economic performance of a country.

The Government recognized the fact that the education system needed to receive a higher level of funding and allocated 10% of the 2003/04 budget to that area, with a commitment to increase the budget by 1% per annum until the allocation reached 15% of GDP. To date, there is little sign that this commitment will be fulfilled. But even if the Government had honoured its commitment to increase expenditure, the impact on transforming the education system would be negligible. The Task Force (2004) estimated that the education system requires at least J$10 billion incrementally over the next 10 years, or approximately J$22 billion per year over the same period, to implement the transformation process.

Recommended actions. The Task Force on Educational Reform (2004) specified that the education bureaucracy has to restructure its systems of accountability and efficiency in order to manage the massive inflow of resources expected to support the transformation process. In addition, the Task Force proposed that a study should be carried out to investigate a number of funding options outside the Government's annual budget. The following are funding options based on recommendations from a number of sources (e.g., Charles, 2004; Davies, 2005; Jamaica. Task

Force on Educational Reform. Financing Successor Committee [Task Force Committee], 2005; UNESCO, 2005).

Funding options proposed. The funding needs of the education system are current, therefore, some of the funding strategies have to be able to come on stream within the first two years of the transformation process. The following funding options are based on the short-, medium-, and long-term needs of the transformation process.

Short-term funding would cover the next two years.
1. One-off allocation of funds by Government for immediate intervention to deal with critical ailments of the system.
2. Earmarking of a portion of the state's proceeds from the gaming and lottery business to finance the early childhood sector.
3. Review of the mix of the training, housing, and education taxes to determine what portion should go to the transformation process.
4. Committing a greater portion of the national budget for transformation.
5. Maintaining cost-sharing programme for a specified duration.

The medium-term funding would come on stream within the next two to three years.
1. Issuing of tax-free government bonds, specifically for funding the education transformation. (This would be at a fixed interest rate for a period of 20–30 years.)
2. Implementing a special education transformation tax, with a duration of 10–15 years—this would be rescinded at the end of the specified period.
3. Identifying low-cost financing from lending agencies such as the World Bank, the Inter-American Development Bank (IDB), the Canadian International Development Agency (CIDA), the UK Department for International Development (DFID), and GTZ, among others.
4. Packaging new schools for private sector or pooled groups—for example, the churches that would fund and/or construct schools. These

schools would be leased to the Government for a specified number of years, with the option to purchase.

Long-term funding to commence implementation within the next 4–10 years

1. Selling off government property, such as the vast amount of unused lands, to support education transformation.
2. Privatizing a percentage (30–40%) of the public schools at primary and secondary level, and instituting a fee as a cost-recovery measure in the remaining government-owned, secondary and primary schools.
3. Expanding the student loan facilities to support borrowing for secondary and primary education.
4. Instituting a scholarship fund to support those who are unable to pay in the semi- or fully privatized option.
5. Privatizing all schools and the purchasing of the services required by Government/users.

Achievements to date. To date, the funding of the transformation process has come from a $J5 billion allocated from the National Housing Trust (NHT) fund. Approximately two thirds of the amount is allocated to the facilities and infrastructure. The expenditures include (a) renovation of existing schools, (b) construction of new schools, and (c) expansion of existing schools. There is also some support from the national budget for education transformation, but the presentation of the supplementary budget for 2007/08 included a cutback on the allocation for education transformation.

Behaviour Transformation

Assessment of the state of the area. The report of the Task Force on Educational Reform (2004) highlights the fact that the antisocial and violent behaviour being experienced in schools is a reflection of what is happening in the wider society. The impact on students and the school community in general has been traumatic, but even more worrying is the fact that mischief and provocation, disrespect and fighting, and wounding with the use of deadly weapons have become prevalent in many of the schools (Task Force).

The impact of the violence and antisocial behaviour has had a negative influence on learning. The Task Force report (2004) indicated that (a) violence has retarded students' learning, (b) students use violence as a self-protective measure, (c) violent behaviour is used to resolve problems, and (d) violence has caused some students to become desensitized to its effect.

Recommended actions. The actions recommended include the implementation of a citizen education programme, which would incorporate existing programmes such as Values and Attitudes in Schools, Peace and Love in Society (PALS), and Change from Within, among others. The strengthening of co-curricular activities, including Scouts, Girl Guides, and Cadet Corps, was emphasized, along with the introduction of homework/after school programmes. The reintroduction of a mandatory course in guidance counselling in all teachers' colleges, the provision of an adequate support services for the school system, and the strengthening of the mentoring and peer counselling programmes were also recommended.

Achievements to date. The Behaviour Transformation Work Stream is in the process of establishing a home and school agreement regarding the responsibilities and obligations of parents and schools for the education of each student. This approach seeks to elicit greater commitment from the stakeholders, with a focus on the interest of the learner. In addition, the existing citizen education programme in schools, which includes Values and Attitudes and PALS, is currently being revised with a view to having a comprehensive launch in all the public schools in Jamaica.

Critique of the Implementation

Approach to Education Transformation

The level of success of the transformation of the education system will depend largely on the willingness of Government to take a national approach to the implementation of the process. This national approach means inclusion of key

stakeholders and a willingness to provide transparency in the process of transformation. The objective here is to facilitate constructive criticism, and encourage participation and input from a broad cross-section of Jamaicans. In fact, the whole notion of transformation signals that the effort is comprehensive and that the main players are active in realizing the goals set out by those who own the process. In Jamaica's case, the Jamaican people are the true owners of the transformation process. At present, while much is said regarding the inclusion of the critical stakeholders in the transformation process, the realization of this objective by the MOE&Y is proceeding, at best, with minimum urgency.

Additionally, the need to fully involve civil society, the teachers and their organization, school principals and their organizations, the private sector, churches, and the political opposition is a necessary requirement which is not being realized with the speed and urgency that reflects the spirit of transformation. Lessons should be learned from the establishment of the Electoral Commission of Jamaica (EOJ), which recognizes the role of the major political parties in establishing and maintaining a credible and transformed electoral system. The successes realized over the past three general elections are directly related to the bipartisan approach taken to the complex issue of having free and fair elections. Emphazing the need for a partnership approach to the transformation of the education system, the White Paper on Education (Jamaica. MOEY&C, 2001) captured the true spirit and structure that should guide the process:

> The government of the day has the legal authority, the right to determine policy and the overall administrative responsibility for the education and training programme at any given time, it must exercise this authority in a spirit and within the context of a partnership with the various constituents . . .. (p. 12)

Reporting on a number of countries seeking to introduce a policy of education for all, UNESCO (2005) outlined that:

> the approach adopted by all countries examined is more participatory and strives to involve different partners (inclusive of)

ministries other that of the Ministry of Education, central public agencies, external corporations and funding agencies, local communities, representatives of civil society, particularly the NGOs, and families. (p. 11)

The transformation process, and specifically the ETT, must take the opportunity at this time to broaden the base of the transformation in order to realize the success stipulated by the Task Force on Educational Reform (2004).

Establishing the Independence of the ETT

The role of the ETT was clearly stated by the Task Force (2004), based on careful consideration of the history of the MOE&Y and the attitude to transformation by those who will be directly affected by the process. Thus, the Task Force recommended that "the transformation team to lead the restructuring and transformation of the education system.…implement the recommendations of the Task Force (and) incorporate the changes of the Ministry and supporting institutions" (p. 79). The removal of the transformation process from the hegemony of the Public Sector Reform Unit (PSRU) and the Cabinet Office to the Ministry was done with the assurance that "the operations of the ETT should be insulated from, and therefore not co-mingled with the existing Ministry operations and bureaucracy." This firewall is necessary in order to ensure that resources identified for transformation are solely directed to that purpose in accordance with good governance.

Despite the clear effort to ensure a level of independence, the centralization of the transformation process in the MOE&Y has only empowered the Ministry to determine how, at what rate, and the nature of the transformation. The necessary broad stakeholder input, which is a precondition for success, has a limited chance to emerge from the new structural and institutional arrangements currently adopted by the MOE&Y.

Re-Establishing a Credible Advisory Board

Decision making related to policy, strategy, and programme implementation rests with a board that

is composed of persons selected by the Ministry. The current structure does not encompass an independent and sufficiently diverse board. The proactive approach of the previous Advisory Board (which guided the transformation under the PSRU) may have restricted the day-to-day influence of the MOE&Y on the transformation process. However, to establish a structure within the MOE&Y for decision making is a wholesale departure from the fundamental tenet that supported the implementation of the transformation of the education system in the first place. The actions taken to correct any perceived imbalance in one direction have clearly taken the situation to a state of disequilibrium in the opposite direction.

While the role of the Minister of Education and the MOE&Y in general must be adequately emphasized in any broad-based board, its composition must exhibit the necessary inclusive approach for transformation to succeed. The Task Force report (2004) identified the critical stakeholders who should play an integral part in the transformation process. These stakeholders include the churches, students, parents, political parties, and teachers, among others. Any reconstituted board must be representative of the main stakeholders. This approach will build confidence in the transformation process, establish the necessary independence of the process, and increase the chance for partners and private providers to fully participate in the transformation process.

Meeting Implementation Targets

The Task Force on Educational Reform (2004) established 2015 as the date for the transformation process to achieve significant progress in the performance of the school system. This seems unrealistic in a number of areas, including facilities and infrastructure—a primary area of concern for the education system. The acquisition of land for the construction of new schools, securing contractors to complete the expansion and renovation of existing schools to meet agreed standards, and the mobilization of over $J60 billion to complete these construction activities will take an additional 5 to 8 years.

The Task Force (2004) recommended that one of the responsibilities of the MOE&Y under the

transformation process was to identify the funding to support the implementation of the programme and activities to transform the education system. Under the administration of Prime Minister Percival Patterson, $J5 billion dollars was allocated to the process. This represents a fraction of the estimated $J219 billion needed to complete the transformation of the education system (Task Force, 2004). Although a study was completed outlining some approaches that could be pursued, the MOE&Y has taken no action to mobilize the funding. This is a serious failing that must be addressed.

Implementation Transformation Based on Critical Priorities

With 133 recommendations involving goals, objectives, and activities, a selective implementation based on a well-thought-out approach is required. One option is referred to by the author as the "significant impact approach," which is to implement the transformation process by identifying front-line programmes that will have a significant impact on quality and output in the shortest period of time. Although there was no widespread discussion on these ideas, the ETT supported the approach and recommended them to the Minister of Education. For each of the main areas of transformation, the following strategies were identified:

1. Curriculum, Teaching and Learning: Implement a comprehensive literacy programme in the school system, which is supported by a national literacy awareness programme. The Caribbean Centre of Excellence for Teacher Training (CETT) was recommended as one of the central intervention activities.

2. Governance and Management: Establish regional education authorities, strengthen the performance management system of the schools, and redefine the role of the MOE&Y.

3. Facilities and Infrastructure: Eliminate the shift system by providing 66,000 spaces over the next 3–4 years.

4. Stakeholder Participation: Implement a public education programme among first-level stakeholders while building alliances and partnerships to advance the transformation process.

5. Behaviour Transformation: Implement a national citizenship education programme, which will include existing behaviour change programmes in the school system.

6. Finance: Secure funding amounting to between J$4 billion and J$5 billion annually.

7. Professional and Human Resources Development: Implement a comprehensive performance management system.

8. Information and Communication Technology (ICT): Implement an ICT system to support the central ministry, regional education authorities, and the schools.

The significant impact approach model will encompass the related goals and objectives as outlined by the Task Force report (2004). As the transformation achieves the targeted goals, the approach will change to match the other goals, objectives, and direction that will be taken on board.

Conclusion

The Task Force on Educational Reform (2004) established 2015 as the target date for accomplishing a number of objectives, including (a) higher levels of educational outcomes, (b) citizens committed to lifelong learning, (c) a globally competent workforce, and (d) learners realizing their potential. Two years after the Task Force report was issued, there is general consensus that the transformation of the education system is lagging behind. Minister Maxine Henry-Wilson (2007), in a discussion on the implementation of the recommendations of the Task Force on Educational Reform, pointed out that transformation is behind because pre-implementation requirements for construction and curriculum programme implementation, among others, have taken some time to be brought on stream. The real question is: Of the targets set by

the Task Force on Educational Reform, the ETT, and the MOE&Y, what has been accomplished to date? The answer to this question may be dependent on the need for Government to institute an appropriate management system to mobilize, monitor, and oversee the process of transformation. This may be the best way to get the required energy to put the transformation process on the front burner of the nation's and the people's business.

References

Charles, J. (2004). *Financing schools without taxation: Unraveling the mystery of Oregon's trust lands.* Retrieved April 10, 2006 from http://www.cascadepolicy.org/ bgc/charles.htm

Davies, O. (2005). Financing higher education: The government perspective. In R. Holding & O. Burke (Eds), *Revisiting tertiary education policy in Jamaica: Towards personal gain or public good* (pp. 3–10). Kingston, Jamaica: Ian Randle.

Hutton, D. M. (2005). *Presentation to the Policy Committee of the MOE&Y of the findings of the space rationalization study and recommendations for ameliorating the physical state of the school facilities.* Kingston, Jamaica: Education Transformation Team. Unpublished manuscript.

Jamaica. Ministry of Education, Youth and Culture. (2001). *Education: The way upward: A path for Jamaica's education at the start of the new millennium* [White Paper]. Kingston, Jamaica: Author.

Jamaica. Public Sector Reform Unit. (2003). *Government at your service: Public sector modernisation vision and strategy, 2002–2012.* Kingston, Jamaica: Cabinet Office.

Jamaica. Task Force on Educational Reform. (2004). *A transformed education system: Report* (rev. ed.). Kingston, Jamaica: Jamaica Information Service.

Jamaica. Task Force on Educational Reform. Financing Successor Committee. (2005). *Report on estimates of cost and funding options*. Kingston,, Jamaica: Jamaica Information Services.

Miller, E. (2006). *Caribbean Centre of Excellence for Teacher Training (CETT) draft proposal to the MOE&Y for implementing the literacy programme in selected schools in Jamaica*. Mona, Jamaica: Joint Board of Teacher Education Foundation, UWI.

UNESCO. (2005). *Financing sector-wide educational transformation.* (Expert report on inter-ministerial dialogue retreat and next steps, October 25-29, 2005). Paris, UNESCO

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Principal Professional Preparation at the Secondary School Sector in Trinidad and Tobago

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Abstract: Effective principals administer effective schools. Yet, while considerable time and financial and other resources have traditionally been devoted the development of teachers, professional preparation of principals has not been given similar attention. Using a quantitative research approach, this study investigated principals' perceptions of the appropriateness or relevance, the quality, and the intensity of the contents of the formal preparation programmes they experienced prior to or during their stint as principals. Data for the study came from 11 principals of secondary schools. Descriptive statistical analysis involving means and standard deviations revealed principals' dissatisfaction with pre-service professional preparation programmes. Nevertheless, principals expressed some measure of satisfaction with different types of in-service programmes.

Introduction

Prior to the mid-1980s, reform movements swept across the international educational landscape but left educational administration largely untouched. Even as late as 1985, when many nations were deeply concerned about the performance of schools, and became excessively obsessed with the credentials and careers of teachers, scant attention was paid to the preparation and qualification of those who led them. Since that time, considerable attention has been devoted to the training and development of educational leaders.

Concerns for improving the profession and the procedures used to prepare school leaders were not limited to the international research literature in the field (Cunningham & Mitchell, 1990; Griffiths, Stout, & Forsyth, 1988). It was also evident locally, as seen in the Secondary Education Modernization Programme (SEMP). What seems clear from all the activities that have taken place in education over the last decade is that issues relating to effective school administration and the preparation of educational leaders are being pushed to the centre of the educational reform stage. There is now a growing feeling among influential leaders, both within and outside of educational administration, that training programmes must be evaluated, expanded, and improved in fundamental ways. The immediate task for the local Ministry of Education (MOE) involves converting the quantity of educational opportunities into quality education for all by ensuring that principals are professionally equipped for the changing school.

This study focused on the secondary school sector in Trinidad and Tobago. It sought to investigate principals' perceptions of the relevance, quality, and intensity of professional preparation programmes for principals of secondary schools.

Historical Background to the Problem

The management and leadership style that characterizes secondary schools in Trinidad and Tobago is rooted in the history of the country. From its inception, school administration was synonymous with control as was governance at the level of all the major institutions in the society. A brief examination of the establishment of secondary schools in Trinidad and Tobago would shed some light on how school administration at the secondary sector has evolved in this country.

Secondary education in Trinidad and Tobago can be traced from the period immediately after the emancipation from slavery in 1834. In the period 1834–1863, five single-sex secondary schools were established (Campbell, 1997). Between 1834 and 1870, the development of education of Trinidad was characterized by fairly constant tension and sporadic struggles between

Government and the Roman Catholic Church primarily. In 1870, a dual system of education was carved out of the tension between Church and State, based on agreed principles of dual participation of Church and Government in education. This arrangement was of such immense proportion that it fundamentally set the stage for the management of secondary education in Trinidad and Tobago up to the present period.

In the early period, school management was unproblematic and the training of teachers or schoolmasters was not given any thought, as all school personnel were expatriates who were perceived to have come with their special administrative skills (Campbell, 1992).

For nearly 100 years, no other secondary school was constructed under the dual system. But during the period 1946–1952, a tremendous upsurge in enrolment in the primary school sector increased the demand for secondary school places. As a result, five additional secondary schools were built. Simultaneously, at the systemic level, attempts were made to reform the curriculum of secondary schools to include technical/vocational subjects instead of pursuing only the traditional grammar-type education. However, during this period, no serious attempts were made to develop the management capabilities of local principals who were increasingly replacing the expatriates of earlier periods.

All through the period of the 1960s to 1980s, other reforms in education, which had implications for the management of secondary schools, were attempted. For example, in the early 1960s, the national economy was opened up to foreign investment through a development strategy called "industrialization by invitation," based on the Puerto Rican model. In 1965, no critical mass of local instructional leaders existed at the secondary school sector, so a UNESCO Mission was invited to make recommendations for improving the system of education. One of the recommendations was that the traditional secondary school curriculum should be reconfigured to include technical/vocational courses to facilitate the promised industrialization thrust. It is worth noting that none of UNESCO's recommendations focused on developing the technical, conceptual, and instructional skills of principals.

In 1972, the first set of large double-shift junior secondary schools was established, followed by the institutionalization of even larger senior comprehensive and composite schools in 1975. The widely publicized vocational and trade schools never materialized due to, inter alia, a successively weak annual domestic financial economy. Consequently, from 1975, all the graduates from the junior secondary schools were placed in senior comprehensive schools, composite schools, and other government and denominational secondary schools. A major development in this period was that the physical facilities at these large schools became very complex, requiring a different type of administrator and different levels of leadership, which the system did not possess in large quantities, nor was the need anticipated. Some of the major challenges of the educational system from the early 1970s to the present time were directed at the management, leadership, staffing, equipping, and monitoring of those large secondary schools.

King (1982) cogently argued that leadership of those large schools was problematic. He pointed out that many of the administrators who ran schools were hastily promoted and did not possess the necessary management and leadership training. This observation was made in stark contrast to the ideas put forward in the educational literature that school effectiveness is unquestionably related to the quality of the leadership provided by the principal.

Another significant attempt at educational reform at the secondary level occurred during the period 1996–2001, referred to as the Secondary Education Modernization Programme (SEMP). This reform effort was initiated in response to many criticisms of the educational system, with respect to the low levels of literacy and numeracy, the general lack of creativity and analytical and problem-solving skills of students, and inadequate administrative and leadership competencies. Among the many objectives of SEMP (Trinidad and Tobago. Ministry of Education [MOE], 1998) were:

- The construction of 20 additional secondary schools widely distributed throughout Trinidad and Tobago;
- Improved efficiency through the professional development of administrators and teachers;

- Institutional strengthening of the Ministry of Education, and decentralization and reorganization of educational services, resulting in greater relative autonomy for school-based management.

The professional development aspect of SEMP anticipated the training of approximately 5,280 individuals, 128 of whom were to be principals who would be engaged in training programmes ranging from short workshop-type sessions to the master's programmes in Education (MOE, 1998). As at September 2001, some of the major achievements of this latest educational reform included:

- The construction of 10 secondary school
- A series of short professional development workshops and school visits

As articulated in the Educational Policy Paper 1993–2002 (Trinidad and Tobago. National Task Force on Education [Task Force], 1994), the professional development sub-component of the SEMP reform initiative was intended primarily to provide personnel who are committed and possess the required competencies, which would combine to provide the critical mass necessary for transforming the secondary education sector. The document emphasized that strategic management, curriculum development, and innovation were to be the workshops' primary focus. The Master of Education (M.Ed.) programme for secondary school principals, as envisaged by SEMP, commenced in July 2002. The extent to which the SEMP initiative (in respect to school administration) has impacted the secondary school sector is yet to be evaluated.

Recruitment and Selection of Principals

Up to 2001, the procedures for selecting and appointing secondary school principals in Trinidad and Tobago remained substantially unchanged from those established during the middle of the previous century. The main features of the traditional selection practice were that candidates were recruited and selected from within the educational system by officials of the MOE, denominational boards, and the Teaching Service Commission, primarily on the basis of seniority.

Successful candidates were given appointments in specific schools. Newly appointed principals would be put on a two-year probationary period, after which the Teaching Service Commission would confirm or disconfirm their appointments. Once confirmed, principals remained in the post for the rest of their working life, unless they voluntarily moved to another school, were transferred, promoted, or, in very rare cases, were dismissed. However, before their selection and appointment as principals, it was not uncommon that most candidates would have functioned as vice-principals or acted as principals for some time. On rare occasions, teachers transitioned from the classroom to the principal's chair.

There is no empirical evidence to indicate that the utmost care is employed in the recruitment of the principals. What the evidence has revealed is that senior teachers are selected and given the responsibility to run secondary schools. Also, there is no empirical evidence that the selection of teachers is based on prior training, or that they are given any or much training in the administration of schools of any type. For example, the King (1982) report stated that no proper training had been given to the principals and vice-principals with respect to the management of those large teaching plants. Also, the *Trinidad Guardian* newspaper (Education needs professional managers, 1995) lamented that despite the fact that Trinidad and Tobago had the best secondary school buildings in the region and continued to spend millions in education, there was continued low levels of educational attainment. The editorial suggested that the persistent wastage and low levels of literacy and numeracy in the educational system might be directly related to the inadequate numbers of professionals qualified with degrees in educational administration in the supervisory and administrative positions.

In another editorial in the *Trinidad Guardian* (Minister warns, 1994), it was noted that the Minister of Education had proclaimed that performance and qualification were to be the main criteria in respect of selection and promotion, especially for those who had been making an attempt at self-development. The same editorial bemoaned the fact that promotions in recent times had revealed a startling departure from the promise. There seemed to be an affirmative action policy, which reserved administrative and

supervisory positions for persons who had had little formal or no recent training in education apart from a Diploma in Education (Dip.Ed.), which they might have obtained decades ago in an academic discipline.

During the last decade of the 20th century, slight changes were observed in the selection process. Whereas, traditionally, selection had been based almost entirely on seniority, in recent times, professional qualification has become an issue for consideration. For instance, in addition to being a graduate of a recognized university and having served as a secondary school teacher for more than eight years, candidates are now required to possess postgraduate professional qualification such as the Dip.Ed. or other postgraduate training in education. However, no information was found to establish the extent to which this additional criterion influences the selection process.

The absence of adequate information has raised three main issues in respect to the selection of secondary school principals. The first deals with the extent to which selectors have complete knowledge of the job and, therefore, the criteria used in the selection process. Also, the complexity and ambiguity of the principal's job is likely to influence a selector's candidate of choice, as each selector may focus on a different variable or may employ unstated perceptions of what the principal does.

The second issue focuses on the extent to which the technical assessment of candidates is restricted by a low predictive selection technology. Principals in Trinidad and Tobago are normally appointed on the basis of a two-stage procedure:

- Consideration of the submitted application documents in conjunction with a special report by the applicant's immediate supervisor

- An interview that may last a little more that 30 minutes

Thirdly, the selection procedure is mystified by the fuzziness (opaqueness) of the information relating to the relative weights assigned to job-related factors such as:

- career path record
- education and training
- quality of experience and performance
- fitness for the particular type of school

- motivation
- job related knowledge and skills
- personality and personal qualities

Training and Development Concerns in the Secondary Sector

The information repository relative to the training and development of school administrators in Trinidad and Tobago during the 19th century and the early part of the 20th century is quite thin. What little information there is indicates that during the period 1834–1960s, training of principals for the secondary school sector in Trinidad and Tobago was not always seen as necessary by the ruling class. Secondary school teachers and principals were expatriates who received their academic preparation/training in the metropole. Whatever skills/competencies they possessed seemed adequate for their jobs. However, with the coming to political office of a nationalist government in the late 1950s, with an agenda to transform the educational landscape to reflect its "Caribbeanness," secondary school teachers and principals were recruited locally, primarily from among university graduates. National, economic, and social developments, as well as institutional strengthening, were some of the major concerns of the new nationalist governments during the 1960s. Development of the human resource took pride of place.

Rationale

The motivation for this study emerged primarily from the belief that the immediate task that Trinidad and Tobago faces in this new millennium is to ensure that its educational system is preparing all its citizens to deal with the challenges of the century. One of the foremost imperatives of the nation, therefore, is to make certain that educational administrators, especially secondary school principals, are adequately prepared and are competent for the changing world; that the new conditions facing secondary school leaders are connected to redesigned programmes for their preparation. This research effort has become more urgent in light of the perception that the nation's secondary schools are in crisis. By almost every measure—the commitment and competency of teachers, student academic achievement, truancy

and dropout rates, crimes and violence—there is a perception that the nation's secondary schools are falling short of expectation, especially when one considers the percentage of public expenditure on education in relation to the gross national product (GNP) over the last 10 to 15 years (Trinidad and Tobago. Central Statistical Office, 2003).

Also, there is a well-entrenched view, albeit somewhat unrealistic, that the problems in education are the business of educational administration, and that insofar as education is failing, the educational administrator is subject to indictment (Marsh, 1992). Equally important is the view that if educational administration as a profession is subject to indictment, then Schools of Education and other similar agencies are proper co-defendants (Murphy & Hallinger, 1992).

Significance

The context in which the professional development of school administrators in Trinidad and Tobago is delivered has seen some changes over the last decade. However, while changes are occurring, there still remains a disconnect between discussions in policy and research circles and what is actually happening on the ground. It is therefore anticipated that this study will lay bare the existing disjuncture between rhetoric and practice, and indicate to the relevant authorities some approaches that might be taken to reduce the gap. It is also expected that the study will initiate and facilitate communication and exchange of information among research, policy, and practitioner, in order to bring those parties together in charting and institutionalizing a common and implementable course of action. Specifically, it is anticipated that the findings will assist training institutions in bridging the gap between educational theory and administrative practices at the secondary school sector.

Delimitations and Limitations

The study recognized the existence of private, state, and state-assisted secondary schools in Trinidad and Tobago, but focused on the latter two types. This approach was preferred as a consequence of the dominance of state and denominational schools in charting the educational development of the twin-island state. With the advent of universal secondary education in Trinidad and Tobago, private secondary schools, though still very important for those who can afford to pay relatively exorbitant school fees, are not as pervasive as they were traditionally. In addition, the administrative structure of most private secondary schools is driven primarily by economic consideration as distinct from the overt national development focus of state and state-assisted secondary schools.

Research Question

This study was driven by a research question that asked:

What are the perceptions of principals concerning the relevance, quality, and intensity of professional preparation programmes for principals of secondary schools in Trinidad and Tobago?

Methodology

The purpose of this study was to investigate principals' perceptions of the relevance, quality, and intensity of the contents of the workshops; seminars; and certificate, diploma, and degree programmes to which they have been exposed in their professional preparation for the principalship. The design of the study utilized a quantitative methodology (Creswell, 2003; Fraenkel & Wallen, 1996). The design targeted 11 schools from the different secondary school types in Trinidad and Tobago. Stratified sampling technique was employed in selecting 11 schools from two of the country's eight educational districts. These two educational districts have a total of 41 schools distributed among six school types. The sample frame for the study consisted of: two junior secondary, two 5-year government secondary, two denominational girls' secondary, two denominational boys' secondary, two comprehensive/composite schools, and one traditional government 7-year secondary school. The 11 principals from these schools constituted a fairly good representation of secondary school principals in Trinidad and Tobago. The 11 principals on whom the study focused were automatically selected. A 48-item questionnaire was employed as the data collection instrument. The data were subsequently

subjected to descriptive statistical treatment and presented in tables.

Findings

The opportunities for professional development available to principals were conceived in terms of:

1. Formal pre-service workshops; seminars; and certificate, diploma, and degree programmes, which were systematically arranged to induct and orient new and prospective aspirants to school administration.

2. Formal in-service workshops; seminars; and certificate, diploma, and degree programmes, which were systematically arranged to train, develop, and upgrade the technical, intellectual, instructional, human relations, conceptual skills, and status of serving teachers and administrators.

Principals' experiences in professional development programmes were investigated in terms of the programmes':

1. relevance – the extent to which the contents of pre-service and in-service programmes:
   - matched the needs of participants;
   - drew upon their personal experiences;
   - allowed participants to meaningfully integrate theory and practice;
   - provided needed knowledge and skills; and
   - provided adequate practicum opportunities.

2. quality – the extent to which the contents, processes, and methodologies:
   - challenged participants to reflect and adapt their moral and ethical perspectives in relation to the tasks of the principalship;
   - challenged participants to reflect upon and perhaps revise their previously held beliefs about individuals and groups;
   - focused on management and leadership issues; and
   - emphasized the accumulation of course credits.

3. intensity – the extent to which the programmes were:
   - inundated with factual material;
   - conducted on part-time or full-time basis;
   - infused with rigorous evaluations strategies; and
   - infused with deep conceptual understandings of educational issues.

In responding to this research question, a questionnaire, which consisted of positive statements, was administered to principals. They were required to report their perceptions by employing a Likert-type scale, with codes ranging from 1—strongly agree to 4—strongly disagree. The questionnaire also requested principals to provide data on their academic and professional qualifications and length of service as principal.

Ideally, principals were supposed to be inducted and oriented to their administrative functions before they assumed duty. However, the evidence from this study indicated the contrary to be more prevalent. The quantitative data revealed that although all principals had diplomas in education, only two individuals had diplomas in educational administration, and, additionally, one principal had a postgraduate degree in education before they were appointed as principals (Table 1). The data indicated that only 3 of the 11 principals might have had some level of formal preparation for their jobs prior to their appointment as principal. Further, as shown in Table 1, none were inducted or oriented by way of workshops or seminars in preparation for their first appointment as principal.

Table 1. Summary of Pre-service Professional Preparation Programmes Attended by Principals

Pre-Service Professional Preparation Programmes	
Workshops & Seminars	0
Certificate in Education	0
Diploma in Education	9
Diploma in Educational Administration	2
Postgraduate Degree in Education	1

Table 2. Summary of the Descriptive Statistics of Principals' Perceptions of the Status of Professional Preparation Programmes

Sub-Variable		Mean	Standard Deviation
Relevance	Pre-service	2.72	0.71
	In-service	2.27	0.63
Intensity	Pre-service	2.67	0.14
	In-service	2.75	0.18
Quality	Pre-service	2.67	0.14
	In-service	2.56	0.24
Overall	Pre-service	2.84	0.38
	In-service	2.44	0.31

The overall moderately high mean score of 2.84 (Table 2) revealed a disturbingly high level of dissatisfaction among principals. The data in Table 2 suggest that, as a group, principals were convinced that the offerings of the pre-service professional engagement did not prepare them for the tasks of the principalship. While the contents of the Dip.Ed. and M.Ed. programmes might have been suitable for educational practitioners in the classroom, the data suggest that most principals felt that the content of those programmes did not help much in preparing them for managing and leading schools. Further, the moderately high mean scores of 2.72, 2.67, and 2.67, in respect of the relevance, intensity, and quality, respectively, of the pre-service professional development programmes, indicated that principals felt that no aspect of those programmes adequately prepared them for school administration. The relatively small standard deviations of 0.14 reported in respect of intensity and quality of the pre-service professional development programmes suggested that there was a high degree of consensus among principals on these issues.

Generally, although all principals had taken personal agency by accessing professional development through the Dip.Ed. and, in one case, the M.Ed. programmes, the evidence suggests that these programmes did not prepare them for school management and leadership. The data have also suggested that no formal arrangements were made by the relevant authorities, that is, the MOE, the educational district that had jurisdiction for those schools, or the Trinidad and Tobago Unified Teachers' Association (TTUTA) to prepare principals for their first appointments.

Table 3. Summary of In-service Professional Preparation Programmes Attended by Principals

In-Service Professional Preparation Programmes	
Workshops & Seminars	11
Postgraduate Certificate in Educational Leadership	2
Postgraduate Degree in Education	3

Table 3 shows that all principals had attended workshops and seminars during their stint as principal; two had diplomas in Education, while three had done postgraduate degrees in Education. The data in Table 3 show that five principals in this study had done postgraduate professional preparation in education.

The overall moderately low mean score of 2.44 reported by principals in Table 2 suggests that they were more satisfied with in-service professional development programmes than with the pre-service programmes (2.84). Specifically, the moderately low mean score of 2.27 reported for the relevance of the contents of in-service professional development programmes suggests that principals believed that the contents of in-service programmes were more appropriate than the contents of pre-service professional development programmes (2.72). Principals might have felt that the material dealt with at those workshops and seminars were appropriate to their needs as new and developing school administrators. Perhaps, principals might have believed that their administrative skills and competencies had been enhanced at those workshops and seminars. Also, the mean score of 2.56 reported by principals for the quality of in-service professional development programmes suggests that principals were less dissatisfied with the quality of in-service programmes than the quality of pre-service programmes (2.67).

Since 5 of the 11 principals had accessed postgraduate certificate and degree programmes after their appointments as principals, it is likely that the interactions occasioned by those in-service professional development programmes provided principals with opportunities to draw on their personal experience and to meaningfully and concurrently integrate theory and practice. It is also likely that principals had greater opportunities to interrogate and refine their administrative and

professional knowledge and understanding of school administration.

Surprisingly, principals expressed greater dissatisfaction with the intensity of in-service professional development programmes (2.75) than with pre-service programmes (2.67). This might be explained by the tendency of workshop planners to pack too many activities into the time available in in-service development programmes. Also, since 5 of the 11 principals had accessed postgraduate certificate and degree programmes during their stint as principals, it is likely that the intensity they experienced could have resulted from having to perform all their school functions and simultaneously satisfy the requirements of postgraduate work.

Overall, the data have suggested that there were mixed feelings among the principals surveyed concerning the adequacy of their formal preparation on assuming the principalship position. On the one hand, while the 11 principals surveyed had read for the Dip.Ed. programme before they were appointed as principals, only two of them studied for the Dip.Ed. with an emphasis on educational administration. Also, the evidence revealed that none of the principals surveyed were formally inducted into the principalship position. It was therefore not entirely surprising that most principals indicated that they were not adequately prepared for their jobs on assuming duty as principal. It was surprising that the authorities responsible for the promotion of excellence in education did not see the need to properly introduce new principals into their jobs by providing the necessary induction support.

On the other hand, principals expressed greater satisfaction with the relevance or appropriateness of the content of in-service preparation programmes. It can be inferred that since all principals had attended professional workshops and seminars, and almost half of them had done postgraduate work in educational administration, it was not altogether surprising that they felt better prepared for their role as principal as a result of having benefited from in-service professional preparation programmes.

Discussion

The concern of this study was to determine, through the perceptions of principals, the relevance, quality, and intensity of pre-service and in-service workshops and seminars, and certificate, diploma, and degree programmes for the professional preparation of principals for secondary schools in Trinidad and Tobago. The findings are discussed in the following sections.

Pre-service Professional Programmes

The pivotal roles principals play in school governance make solid pre-service preparation of school principals an imperative. It is therefore reasonable to believe that pre-service training of school administrators would equip prospective principals with the managerial and leadership competence so necessary for their first principalship assignment. Pre-service preparation should help principals become more familiar with methods to create orderly school environments and enlist the commitment of staff. Thus, it was reasonable to hypothesize that principals who had adequate pre-service preparation in school administration should be more effective in the performance of their duties and responsibilities.

While these sentiments seemed laudable and desirable, this study has exposed the disconnect between what is desirable and the reality of pre-service preparation in Trinidad and Tobago. For example, the data generated from the quantitative research methodology have indicated that less than 25% of the principals on whom the study focused, and under whose leadership the success of those schools depend, were never the beneficiaries of pre-service professional development program-mes. The lopsidedness or uneven development of education in this country is exposed. Annually, a significant percentage of the country's GDP is spent on educational reform. This is achieved by way of upgrading the physical infrastructure, tinkering with the curriculum, and providing training and development opportunities for teachers. However, little provision has been made, over the years, for systematic and systemic induction of prospective principals. What is even more surprising is the fact that greater efforts on the part of the authorities responsible for educational development in Trinidad and Tobago have not made it mandatory for those aspirants to the position of principals at the secondary school level to undergo a sustained and meaningful pre-

service professional preparation before assuming the job.

For a developing country which has acknowledged that there is a positive correlation between secondary education and national development, and a country that has pumped tremendous amounts of the national resources into attempts at transforming the education system, it is inconceivable that formal induction and orientation of prospective school leaders continues to be left to chance or to the personal initiatives of individuals. The literature has nevertheless indicated that the educational authorities in Trinidad and Tobago and in other Third World countries are not singular in this respect. For example, Hoffer and Coleman (1990), and Chubb and Moe (1990) have provided evidence from Germany, Italy, France, and Japan, where little or no formal training in educational administration is required of beginning principals. These researchers have argued that secondary schools in those countries do not appear to be disadvantaged in any way, compared to schools in the United States (US), which have a much longer history of pre-service training for principals, and where substantial amounts of pre-service graduate training is required in order to be certified before appointments are made. Further, these researchers have also reported several studies conducted in the US, which have indicated that many private schools outperform their public counterparts even though administrators of private schools have significantly less graduate training than their counterparts in the public school sector. These findings, however, do not diminish the significant contribution that pre-service professional preparation can bring to principals of secondary schools in Trinidad and Tobago. The findings from this study indicate that pre-service preparation is needed.

In-Service Preparation Programmes

Given the low priority allocated to pre-service professional opportunities for secondary school principals at the national level, and the relatively low involvement of principals at the individual level, in-service programmes in Trinidad and Tobago seem to hold great promise in the drive to prepare administrators for the challenges of school administration. The relevant literature indicates that one of the most attractive dimensions of in-service programmes is its promise to enhance the technical and intellectual abilities of participants. Another promise of in-service professional development programmes is the enhancement of principals' management of instruction. Yet, in this study, mixed appreciation was expressed by principals in respect of the different types and different dimensions of in-service professional development programmes that they had attended.

The principals in this study expressed concerns about the relevance, quality, and intensity of the shorter workshop and seminar type professional development sessions vis-à-vis the longer certificate and degree-type professional development programmes. If these concerns are valid, then, on the one hand, it indicates that the MOE must pay greater attention to the content and the effects of the short-term training that it is providing for principals; while, on the other hand, these findings constitute a serious indictment against tertiary and other institutional providers of postgraduate professional training for secondary school principals. The literature is rich with complaints from principals who attended the longer versions of professional preparation programmes.

For example, many researchers (Clark & Clark, 1996; the Holmes Group 1995; Lewis, 1997; Murphy, 1990) have commented on the lack of relevant programme coursework to the realities of school life as major concerns of principals. They have also claimed that much of the training curriculum focuses on management issues, while instructional and school improvement issues are given disproportionate attention. It has also been said that programme tutors do not model good teaching that demonstrates to students best practice in classroom instruction. Further, they have stated that opportunities for learning leadership in real school settings are limited to fixed periods rather than infused throughout the curriculum. Candidates are deemed ready to perform leadership functions in their schools based on how many credits they accumulate rather than how well they perform in school situations. Similarly, Bridges and Hallinger (1997) have observed that, typically, in the training institutions, students are inundated with theory but have few opportunities to wrestle with applying educational and organizational theories to specific professional

problems and challenges. If these charges are applicable to the longer versions of in-service professional preparation programmes in Trinidad and Tobago, then all programme providers, including The University of the West Indies (UWI), must strive to bridge the gap between theory and practice in students' minds by blending classroom work with internship, mentorship, or practicum through the establishment of meaningful university-school partnerships.

Recommendations

The voluminous literature on school administration has indicated that the job of school principals has changed dramatically. However, the findings from this study have revealed that formal professional development of principals has not kept pace. To be successful, new ways of preparing school leaders, based on the understanding that school leadership is a multifaceted issue involving political, technological, managerial, instructional, and contextual dimensions, must be fashioned. Acting alone, professional educators do not possess the political leverage to attract the necessary human and financial resources to implement the changes needed.

The demands made on principals to increase the effectiveness of schools have focused attention on the necessity for enhanced pre-service and continuous in-service professional development of school principals. However, findings from this study have indicated that few principals had been exposed to pre-service training. Further, although all principals had some measure of training, many were less than satisfied with the quality, intensity, relevance, or with varying combination of all three aspects of in-service training. The displeasure expressed by many principals suggests that there is now a greater need to redefine and reconceptualize professional development. This will include the establishment of new sets of relationships or partnerships between and among the providers of professional development programmes—TUTTA, the relevant educational districts, and the MOE— to work together in preparing principals for the future. For instance, UWI, the University of Trinidad and Tobago (UTT), other major providers of tertiary education in educational administration in Trinidad and Tobago, and

TUTTA will have to establish closer partnerships amongst themselves and with the MOE and, by extension, secondary schools in each educational district.

For such partnerships to succeed, certain prerequisites must be established. These prerequisites will necessitate that:

1. Secondary schools must be adequately resourced in terms of human, financial material, and equipment.

2. There must be mutual agreement and responsibility between and among partners for identifying and developing goals, and for achieving outcomes that are mutually beneficial to the partnership.

3. There must be periodic evaluation of the effectiveness of the partnership.

4. There must be a well-conceived mentorship programme in which mentors must be financially rewarded.

5. There must be a cohort group approach to professional development.

Establishment of partnerships as a preferred professional development preparation approach has the advantage of benefiting the schools involved, the training institutions, and the students who aspire to occupy leadership positions in schools. Partnership would consist of each student-administrator in the programme having a principal as mentor to work with him/her. In such a mentor-mentee relationship, the structural and organizational features of the partnership would include determination of mutual needs, joint selection of partners, and joint planning between the MOE and programme providers.

The partnership approach to professional development, with the features mentioned, has the potential to reduce or eliminate the deficiencies that many principals claim plague current professional development efforts. It is envisaged that such a collaborative approach would provide principals with a stronger knowledge base; theories that reflect the realities of schools; and greater emphasis on teaching, ethics, social justice, and vision building. Also, to infuse greater elements of reality into professional development preparations, practising administrators should be

included in the preparation and delivery of the curriculum.

The establishment of partnerships between professional development institutions and schools also harnesses the potential to facilitate the:

1. development of learning laboratories in schools in which student-administrators can make protected or mentored mistakes from which they can learn and develop;

2. selection of candidates and design of professional development programmes; and

3. selection of the best candidates who show the greatest promise of the future successful principal.

The partnership model that involves mentee and mentor working in a collaborative relationship is supported by new perspectives from cognitive psychology on learning theory. These perspectives of learning postulate that a contextualized view of the thinking and learning process is needed so that knowledge is created and made meaningful by the context and activities through which it is acquired. This perspective of knowledge creation is often referred to as situated knowledge or situated cognition (Brown, Collins, & Duguid, 1989).

Conclusion

The study employed a quantitative research methodology to explore the perceptions of school administrators about the relevance, quality, and intensity of professional preparation programmes for principals of secondary schools in Trinidad and Tobago. No specific attempts were made to investigate the actual contents of the professional development programmes. Information was gleaned from the "lived experiences" of principals who had attended pre-service and in-service professional development courses.

The study was grounded in the historical emergence of secondary education in Trinidad and Tobago. Relevant literature was weaved into the background to the problems to highlight the significance of professional preparation of school leaders.

Many of the findings from this study were supported by those from other studies. For example, the sparse research evidence available suggests that locally (Trinidad and Tobago),

regionally (the Caribbean), and internationally, pre-service professional development for secondary school principals is a relatively new phenomenon, which lacks systematic and systemic features. In this study, of the 11 principals surveyed, only 3 indicated that they had experienced any type of pre-service training. None was impressed with the appropriateness of the contents, quality, and intensity of the programme offering.

In conclusion, the evidence from the literature and from this study clearly suggests that professional development of secondary school principals is crucial and cannot be left to chance. If principals are to develop appropriate and adequate skills, attitudes, knowledge, and understandings that support their management and leadership practices in establishing effective schools, then the MOE, in collaboration with the appropriate tertiary institutions, must design and develop relevant programmes for aspiring and experienced principals, which would help them continue their professional growth as school leaders. Further, having regard to the dearth of studies that have investigated the effects of professional training and development of principals on school outcomes, more research is needed to expand this body of knowledge.

References

Bridges, J. S., & Hallinger, P. (1997). Using problem-based learning to prepare educational leaders. *Peabody, Journal of Education, 72* (2), 131–146.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42.

Campbell, C. C. (1992). *Colony and nation: A short history of education in Trinidad and Tobago, 1834–1986*. Kingston, Jamaica: Ian Randle.

Campbell.C. C. (1997). *Endless education: Main currents in the education system of modern Trinidad and Tobago, 1939–1986*. Mona, Jamaica: The Press UWI.

Chubb, J. E., & Moe, T. (1990). *Politics, markets and America's schools*. Washington, DC: Brookings Institution.

Clark, D. C., & Clark, S. N. (1996). Better preparation for educational leaders. *Educational Researcher*, *25*(9), 18–20.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.. London: Sage Publications.

Cunningham, L., & Mitchell, B. (Eds.). (1990). *Educational leadership and changing contexts in families, communities, and schools* (Eighty-ninth Yearbook of the National Society for the Study of Education). Chicago, IL: University of Chicago Press.

Education needs professional managers. (1994, May 19). *Trinidad Guardian*, p. 6.

Fraenkel, J. R., & Wallen, N. E. (1996). *How to design and evaluate research education* (3rd ed.). New York: McGraw-Hill.

Griffiths, D. E., Stout, R. T., & Forsyth, P. B. (1988). *Leaders for America's schools: The report and papers of the National Commission on Excellence in Educational Administration*. Berkeley, CA: McCutchan Publising.

Hoffer, T. B., & Coleman, J. S. (1990). Changing families and communities: Implications for schools. In L. L. Cunningham & B. Mitchell (Eds.), *Educational leadership and changing contexts in families, communities, and schools* (Eighty-ninth Yearbook of the National Society for the Study of Education; pp. 118–134). Chicago, IL: University of Chicago Press.

Holmes Group. (1995). *Tomorrow's schools of education*. East Lansing, MI: Author.

King, St Clair, A. (1982). *Report of the committee appointed by Cabinet to consider the feasibility of converting junior secondary and senior comprehensive schools into full time five year schools*. Port of Spain, Trinidad: Ministry of Education.

Lewis, A. C. (1997). Standards for new administrators. *Phi Delta Kappan, 79*(2), 99–100.

Marsh, D. D. (1992). Enhancing instructional leadership: Lessons from the California Schools Leadership Academy. *Education and Urban Society*, *24*(3), 386–409.

Minister warns, promotion on merit [Editorial]. (1994, May 9). *Trinidad Guardian*, p. 23.

Murphy, J. (1990). *Preparing school administrators for the twenty-first century: The reform agenda. In L. L. Cunningham & B. Mitchell (Eds.), Educational leadership and changing contexts in families, communities, and schools* (Eighty-ninth Yearbook of the National Society for the Study of Education; pp. 232–251). Chicago, IL: University of Chicago Press.

Murphy, J., & Hallinger, P. (1992). The principalship in an era of transformation. *Journal of Educational Administration*, *30* (3), 77–78.

Reece, J. L., & Seepersad, K. (1998). GORTT/IDB *Secondary Education Modernisation Programme: Final report: Curriculum development sub-component*. Aranguez, Trinidad: SEMP.

Trinidad and Tobago. Central Statistical Office. *(2003). Report on education statistics 2000/2001*. Port of Spain, Trinidad: Author.

Trinidad and Tobago. Ministry of Education. Secondary Education Modernization Programme. (1998). *Education for all*. Aranguez, Trinidad: Author.

Trinidad and Tobago. National Task Force on Education. (1994). *Education policy paper (1993-2003) (White paper)*. Port of Spain, Trinidad: Author.

Defining the Role of the Course Coordinator in UWIDEC's Blended Learning/Asynchronous Delivery Mode

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Abstract. There is wide consensus that the online teaching/learning environment works best when participants conceive of themselves as belonging to and functioning within a community. This paper holds that community members must be clear about their respective roles and about the interrelationship among those roles. In the 2005–2006 academic year, the UWI Distance Education Centre made the shift from face-to-face to online tutoring as part of a movement to a blended learning/asynchronous delivery mode. In that context, emphasis was placed on articulating procedures for the functioning of three key stakeholders, namely course coordinator, tutors, and students. This paper describes some aspects of the course coordinator's role. It then locates the role within a theoretical framework built, in part, on the conception of the online environment as a community of inquiry, with special emphasis on its teaching presence dimension. The concepts of transactional distance and transactional control are also highlighted. The paper concludes by noting the implications of this new outlook for the overall role of the higher education practitioner.

Introduction

Conventional higher education centres on two primary activity areas—research and teaching—and the agents carrying out the latter are typically referred to as lecturers or professors. The course coordinator in the distance delivery mode of the Distance Education Centre of the University of the West Indies (UWIDEC) shares some of the attributes of the lecturer of the face-to-face classroom setting. Like the lecturer, the course coordinator is recognized as a subject matter expert within a particular body of knowledge, and has been deemed capable of providing instruction for a course based on that body of knowledge. Like the lecturer, the course coordinator is required to develop and administer assessment procedures for evaluating students in order to determine if and how they will be certified as having successfully completed the particular course.

Those similarities apart, there are important differences between the two, all of which may be subsumed under the phrase "attention to the learning process." While not disregarding the role as a content specialist, greater emphasis is placed on his/her capacity to build and maintain an environment for supporting learning in the given content area. What is required here is not only subject-matter expertise, but also competence in facilitating and managing the process of learning.

This paper seeks to define the role and function of the course coordinator in the blended learning/asynchronous delivery mode that is currently being used by UWIDEC for offering its programmes and courses at a distance. In doing so, the paper will seek to analyse the role from a systemic perspective, with a view to clarifying how it interfaces with the role and function of the other stakeholders in the online teaching/learning enterprise. Essentially, the role of the course coordinator will be discussed within the framework of the model that UWIDEC has developed for implementing teaching and learning online.

UWIDEC and Online Learning

UWIDEC is the distance education arm of The University of the West Indies (UWI), which began operations in 1997 to increase access of the wider English-speaking Caribbean to the offerings of the university. In specific terms, this has meant that UWIDEC has functioned in a facilitating capacity to support the development and delivery of existing programmes of the faculties and other teaching departments of the university.

In the 2005–2006 academic year, UWIDEC took the important step of transforming its

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delivery to a blended learning/asynchronous mode. The core feature of that change is that tutoring of the university's distance students is now conducted online, using the open source web-based learning management system (LMS), *Moodle*.

According to the UWIDEC online learning model, the three actors functioning in the online learning space for any given course are students, tutors, and the course coordinator. Students interact directly with tutors in small tutoring groups of 20 to 25, based on a set of learning activities that are designed by the course coordinator, and which derive from the content of the self-study course materials that form part of the teaching/learning experience for the course. The course coordinator functions at an overarching level, monitoring and guiding the tutor-student interaction across all tutoring groups, and also interacting directly with the tutors in a special course coordinator-tutor forum set up to facilitate exchange on matters related to course delivery. The UWIDEC online teaching/learning model therefore positions the course coordinator in a supporting role to the tutor, and the tutor in a direct supporting role to the student within the tutoring group. At the same time, the course coordinator, while not occupying an in-group position, also provides guidance to the entire student body through a special forum that is accessible to the entire student cohort for the course. It is important to note that what defines the role as supporting is not so much how and where it is positioned, but the nature of the functions that characterize that role.

Defining the Role Through Continuous Documentation

A key feature of the transformation that UWIDEC has embarked on is the documentation of the procedures for effecting that transformation. To this end, documents have been prepared to guide all major aspects of the operation. In terms of the roles of the three actors in the online learning space, the following were developed:

- Lists of duties and responsibilities for tutors and course coordinators, appended to the respective contracts

- *Guidelines for the UWIDEC Tutor*

- *Managing Your Learning Offline and Online: Study Guide for the UWIDEC Student*

- *E-tutoring Tasks for the Blended Learning Course, Update for Semester 2, 2006–2007*

- *Course Coordinator Tasks for the Blended Learning Course – Semester 2, 2006–2007*

The last two items of the list were developed at the beginning of Semester 2 of the 2006–2007 academic year, as a result of feedback received from students through an online survey. The survey questionnaire, entitled *Student Evaluation of the Online Learning Experience*, was administered to all students registered in the various courses being tutored online, at the end of Semester 1, 2006–2007. Given the widespread dissatisfaction expressed with the performance of these two stakeholders, it was felt that there was a need to articulate their respective tasks in greater detail and with greater clarity. Shorter memoranda and updates followed over the course of Semester 2. In the case of tutors, there were four monthly updates spanning the period January–April, 2007. For course coordinators, there were two additional memoranda in January and February.

This paper draws on the last item of the bulleted list above as well as the two additional memoranda just mentioned to outline the role of the course coordinator in UWIDEC's model of online teaching and learning.

Course Coordinator Tasks

The following is a list of the tasks identified for the course coordinator and described in some detail through the documents named above. These tasks deal primarily with the academic/instructional aspects of the online learning experience. The socio-psychological dimensions of the experience are addressed through other channels in the UWIDEC model.

- Developing the course schedule

- The design and development of in-course learning activities

- The design and development of in-course assignments and mid-semester examinations

- Providing guidelines for tutor grading of various types of assessment exercises

- Managing the procedures for submission of grades and the provision of feedback within the online classroom space

- Posting in the Course Coordinator Announcements' forum

- Monitoring and posting in Teachers' (Course Coordinator-Tutor) forum

- Guidelines to tutors for the design and development of discussion topics and the moderation of the online discussion

- Guidelines to tutors for the preparation of eTutor presentations

Four of these tasks will be discussed below.

Developing the course schedule. While acknowledging that this task is very much a feature of conventional teaching/learning systems, it assumes even greater importance in the distance, online context. Providing online students with a clear schedule is necessary, given the reality that these students must function as autonomous learners, with responsibility to manage their own learning. Providing a clear study schedule is also expected to assist students in the management of their own time, not only in relation to the tasks listed, but also in relation to all the other tasks that are a part of their everyday lives.

One important feature of the course study schedule in the UWIDEC model of online learning is that the model seeks to ensure that all tasks relevant to the implementation of a particular operation or transaction are accurately identified and timetabled in the schedule. It is envisaged that such an undertaking would make it possible for all stakeholders to be aware of the inputs of the others and, by extension, would allow all to see how the respective tasks interrelate with one another. In

this regard, the following tasks were specified for the main assignment:

- Course coordinator releases assignment with accompanying guidelines/instructions

- Students upload assignment

- Tutor completes grading and makes assignments and grades available to course coordinator for moderation

- Course coordinator returns moderated grades to tutor

- Tutor makes grade and written feedback available to individual students

- Tutor submits mark sheet for his/her group to course coordinator

- If necessary, students seek answers to queries about grades/feedback

- Tutor responds to student queries

The design and development of learning activities. Learning activities are small-scale tasks intended to provide students with the opportunity for self-assessment at regular intervals throughout the study of the course. It is also envisaged that they will serve as stepping stones allowing students to strengthen their capability to undertake the major assessment exercises of the course, namely, the in-course assignment, the mid-semester examination, and the final examination. Examples of learning activities listed were a multiple-choice quiz, a short essay, a short answer tutor-marked test, a problem set, a mini case study, and a mini research activity. Guidelines were provided to assist course coordinators in developing each type under three headings. The following are excerpts from the guidelines given for developing the short essay:

Activity	Basic Details	Further Info for Students	Further Info for Tutors
Short essay	• Number for the semester • Deadline for submission • Date when tutor must acknowledge receipt • Date when tutor must give grade and feedback to students • **Purpose and focus of essay must be clearly recognized in essay topic**	• What aspect/area of course essay based on • What outcome expected • Length of essay • What specifics students must pay attention to, e.g., relevance and clarity of each point made… • Link between introduction and conclusion	• What tutors must do in period leading up to submission of essay • Suggestion that they can extend on any aspect of guidelines already given, e.g., writing a proper paragraph • Emphasize that comments (feedback) should be based on guidelines given to students

Guidelines to tutors for the preparation of eTutor presentations. In the UWIDEC model, each tutor is expected to make at least one eTutor presentation (mini-lecture) per Unit, which, in most cases, is one per week. The following explanation was given in the *Course Coordinator Tasks* for this eTutor task:

> The ETutor presentation and the general discussions that are moderated in the Unit discussion forum, are the core elements of the ongoing (weekly) tutoring activity. Together they provide the backbone of the tutoring experience for the student. They must be efficiently handled.

Against that background, it was recommended that course coordinators could advise tutors as follows about the eTutor presentation:

• Advise tutors to avoid simply paraphrasing sections of the course content of the respective Units.

• Based on their knowledge of the course content, tutors could identify aspects of the Unit that require more extensive treatment … E-tutor presentations could be developed to explain and flesh out difficult concepts … whether in the course material itself or in the readings.

• Where appropriate, course coordinators could make available additional material in the Teachers' Forum, which tutors can draw on for preparing their presentations.

Monitoring the teachers' forum. The teachers' forum can be considered as the online staff room where members of staff come together to discuss their work-related experiences, share good practice, and make recommendations for improvement. In this context, it was reserved for exchanges between the course coordinator and tutors. Course coordinators were advised as follows about the use of this space:

• **You should be posting here at least once per week. Use this forum to do the following:**

    • Discuss any aspect of the course content not adequately dealt with in an e-tutor presentation and/or discussion

    • Make suggestions about any areas that could be targeted for additional development by the tutor

    • Provide supplementary material/links that tutors can draw on for their own group work

    • Share ideas about new developments in the field/discipline with your professional/academic colleagues

Earlier, it was noted that the role of the course coordinator is to support the tutor, and that of the tutor is to support the student. What this arrangement implies is that this aspect of the teaching dimension of the UWIDEC online delivery mode is designed to function as a double-layer structure, with the course coordinator guiding the tutor, who in turn functions as the primary facilitator of student learning. It can be argued that how well the tutor performs that

facilitating function is in part dependent on the quality of the support that he/she receives from the course coordinator.

Theoretical Underpinnings of the Course Coordinator Role

Theorists and practitioners in the field generally agree that the online learning space works best when it is conceived of as a learning community (Conrad & Donaldson, 2004), and when a sense of community is fostered among the participants involved in the online learning experience (Rovai, 2002). Garrison, Anderson, and Archer (2000) offer a specific theoretical model of the community, namely as a community of inquiry, which, they assert, is based on a model of critical thinking and practical inquiry. They assert further that the community of inquiry framework is based on the interaction of social presence, cognitive presence, and teaching presence, and that it is this interaction which facilitates learning within the community.

Tu and McIsaac (2002) explain that social presence is a measure of the feeling of community that a learner experiences in an online environment. Garrison et al. themselves define it as the "ability of participants…to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (p. 89). Cognitive presence, according to Garrison et al., is "the extent to which the participants are able to construct and confirm meaning through sustained communication" (p. 89). With regard to teaching presence, Anderson, Rourke, Garrison, and Archer (2001), who coined the term, say that it refers to "the design, facilitation and direction of cognitive and social processes for the purpose of realizing [students'] personally meaningful and educationally worthwhile objectives." They further state that this element is composed of three categories of activities—course design and organization, facilitation of discourse, and direct instruction—with specific indicators identified for each category. Of special interest is the assertion which Garrison makes that "teaching presence is a significant determinant of student satisfaction, perceived learning, and sense of community" (as cited in Stodel, Thompson, & MacDonald, 2006, p.17).

Also of interest is the recommendation of Stodel, Thompson, and MacDonald (2006), who, based on their own study using the community of inquiry framework, suggest the following as one implication for practice:

> Educators should articulate best practices, be role models in their online interactions, provide strong community building behaviours, remind learners of the important role they have in the discussions, offer constructive feedback, and be present to coach and support learners in their interactions. (p. 18)

For the purpose of this paper, the interest in the community of inquiry framework is a limited one. Specifically, it is the teaching presence component of the framework that resonates with the course coordinator role as discussed above. While acknowledging that teaching presence, as discussed in the literature, is not viewed as the responsibility of a single entity, we nonetheless emphasize that much can be gained by viewing the course coordinator's role against the backdrop of this attribute of the community of inquiry framework.

Another aspect of the theoretical discourse on online learning that can inform perspectives on the role of the course coordinator is Moore's (1983) theory of transactional distance. Moore holds that the distance in distance education should be viewed in pedagogical rather than physical terms, hence the term he created, transactional distance. Moore explains that this construct is a function of the interrelationship of two variables, namely, dialogue and structure. Dialogue refers to "the extent to which, in any educational programme, learner and educator are able to respond to each other" (p. 157). Structure, he defines as "a measure of an educational programme's responsiveness to learners' individual needs" (p. 157). Moore therefore posits that transactional distance varies according to the rate of dialogue and structure, a claim that is confirmed by Saba and Shearer (1994) in their empirical study. These researchers conclude that as learner control increases, the rate of dialogue also increases and, as a result, transactional distance decreases. Conversely, as instructional control increases, the rate of structure increases, leading to an increase

in the level of transactional distance (see also Moore & Kearsley, 1996*)*.

Dron's (2007) interpretation of the theoretical construct coheres highly with Saba and Shearer's finding. Dron contends that:

> If an educational transaction is highly structured, then the sequence of learning activities is controlled by the teacher. On the other hand, if there is a lot of dialogue, then out of necessity, the teacher is relinquishing control to the students, as they are able to influence the series of events that lead to the learning they desire. (p. 28)

Dron himself considers it necessary to move beyond transactional distance to what he refers to as transactional control. He explains that:

> The significant issue, when considering transactional control, is not whether there is dialogue or structure, but instead who is making the choices about where to go next at any given point in a sequence of learning activities. If the teacher is the chooser, then the transactional control for the learner is lower. If the learner is the chooser … then the learner's transactional control is higher. (p. 29)

Issues of structure, flexibility, and control, as they relate to teaching and learning in open and distance learning, have been the subject of much debate for decades. It can be argued that the course coordinator role described above is reflective of an online learning environment that places greater emphasis on structure and, by extension, teacher control, and less on flexibility and dialogue, thereby minimizing learner control. While this is so, it can also be argued that at the present juncture, such an approach is justified since there is a need to ensure that students and tutors are given an opportunity to acquire the skills and attitudes necessary for effective participation in the online learning environment. Teaching presence and a high level of structure are therefore critical factors in the design and implementation of online learning in the UWIDEC context at this juncture.

Beyond Lecturer to Course Coordinator

Given the strategies described earlier, and the theoretical underpinnings just discussed, it is evident that there is need to reconceptualize the educational practitioner in the wider higher education context, not just in relation to teaching and learning at a distance. The following are therefore offered for consideration.

Re-defining the self as a teacher in higher education. Earlier, it was noted that notions of the conventional lecturer were no longer applicable and that the course coordinator concept represents a significant shift in terms of teaching in the higher education context. A key dimension of that redefinition is the recognition of teaching as a distributed function in the online environment, as distinct from a single person in the conventional classroom. As in other contexts, in the UWIDEC model, several entities share the teaching function. These include the self-instructional course materials; the design of the online learning space (classroom) itself; and several human agents including course coordinator, tutor, a course management team, and the learners themselves.

What this distributed system entails is a need for clarity in the task(s) that each entity performs, and an awareness of the interrelationship among these tasks within the framework of the overall goal of supporting and facilitating learning. This new orientation to teaching and learning makes at least two important demands of the various elements (and for our purposes, of the course coordinator) in the teaching/learning transaction.

The first is that each needs to be conscious of the way its own function interacts with the functions of others. In the case of the course coordinator, this systemic outlook is even more required given his/her more prominent role. The course coordinator must also be aware of his/her role to provide guidance to ensure that other entities are performing their assigned functions in a manner that would contribute to efficient goal attainment.

Flowing from this systemic perspective is the issue of accountability. The goals of distributed teaching can only be achieved if each entity accepts ownership of its own role and function and accepts responsibility for their efficient implementation. A higher level of accountability is

required of the course coordinator, not simply from a moral standpoint, but also as an important requirement if the integrity of the system is to be maintained and system goals are to be achieved.

The re-definition of the self also requires the course coordinator to assume the persona of a higher-level learning facilitator, with responsibility for building similar skills among other learning facilitators (tutors) at a lower level. In essence, in the context of the community of inquiry discussed earlier, the course coordinator of the UWIDEC model can be regarded as "a first among equals."

Adopting a language of action. In all transactions, communication is critical. In the online learning environment, with no physical contact among participants, interpersonal communication assumes increased significance. Essentially, communication becomes an important tool for building and sustaining the community of inquiry. This requirement has implications for the nature of the discourse used. Language must be dynamic rather than static, decisive rather than indecisive; it must be action-oriented, directional, engaging, and purposeful; it must be capable of building bridges and making connections in a manner that would move the learning process forward. Such an approach to languaging can also be expected to contribute to the building of confidence among the other participants.

Feedback. Finally, there is the role of feedback. Feedback performs an important function in that it acknowledges not only the presence of the other but also the worth of that individual. Providing feedback must therefore become a key function of the course coordinator. Earlier, we spoke briefly about the use of the course coordinator's announcement forum; we also discussed the course coordinator's input into the exchanges in the Teachers' Forum. It can be argued that the extent to which these two forums are used effectively depends on the capability of the course coordinator to "read" and correctly interpret the messages emanating from students and tutors alike, and subsequently making the kind of interventions that reflect a keen awareness of what is required to enhance their participation in the community and, by extension, their own growth as learners.

In that regard, feedback must also be anticipatory, since messages that have to be acted on may not always be expressly stated, or may only be vaguely communicated in the present. The course coordinator needs to be able to look ahead at the likelihood of how that message may develop in the future and provide feedback in the present, taking that future possibility into consideration.

Conclusion

The purpose of this paper was to describe the strategies designed and implemented for defining the role and function of the course coordinator in UWIDEC's blended learning/asynchronous delivery mode. It was also intended to examine that role as it impacts on the functioning of the other two stakeholders in UWIDEC's online teaching/learning system. It was not intended to be evaluative. Nonetheless, it is evident that there is need for research to analyse the extent to which the strategies are being implemented, and to assess their capacity to provide efficient support for online teaching and learning in the UWIDEC context.

References

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks, 5*(2), 1–17. Retrieved April 19, 2007, from http://www.sloan-c.org/publications/JALN/v5n2/ v5n2/_anderson.asp

Conrad, R., & Donaldson, J. A. (2004). *Engaging the online learner: Activities and resources for creative instruction.* San Francisco, CA: Jossey Bass.

Dron, J. (2007). *Control and constraint in e-learning: Choosing when to choose.* Hershey, PA: Idea Group Publishing.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education, 2*(2–3), 87–105.

Moore, M. G. (1983). The individual adult learner. In M. Tight (Ed.), *Education for adults, vol. 1: Adult learning and education* (pp. 153–168). London: Croom Helm.

Moore, M. G., & Kearsley, G. (1996). *Distance education: A systems view.* Belmont, CA: Wadsworth.

Rovai, A. (2002). Building sense of community at a distance. *International Review of Research in Open and Distance Learning, 3*(1). Retrieved April 19, 2007, from http://www.irrodl.org/index.php/irrodl/article/viewFile/79/153.

Saba, F., & Shearer, R. (1994). Verifying key theoretical concepts in a dynamic model of distance education. *The American Journal of Distance Education, 8*(1), 36–59.

Stodel, E. J., Thompson, T. L., & MacDonald, C. J. (2006). Learners' perspectives on what is missing from online learning: Interpretations through the community of inquiry framework. *International Review of Research in Open and Distance Learning, 7*(3), 1-24. Retrieved April 19, 2007, from http://www.irrodl.org/index.php/irrodl/article/view/325/744.

Tu, C-H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education, 16*(3), 131–150.

Students as Consumers of Higher Education: Implications for the University of the West Indies, St. Augustine Campus

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Abstract. As recent as the early 1970s, the word *consumerism* was associated with goods and services but not used with respect to students. However, with the continuing change in higher education over the last 35 years, students are now being seen as consumers rather than as a body of people in the pursuit of knowledge. It has been argued that because of the commodification of higher education, education is likely to be reconceptualized as a commercial transaction, with the lecturer as the "commodity producer" and the student as the "consumer." Administrators of higher education institutions must therefore respond to the views and needs of students. At the St. Augustine Campus, much improvement has been made with respect to student needs, and the views of students were recently sought with respect to the shaping of the new strategic plan for the campus. However, much more still needs to be done. This paper explores the reasons for student consumerism, and identifies and discusses some of the advantages and disadvantages of this type of consumerism. Management implications for higher education institutions, in general, and the The University of the West Indies, St. Augustine Campus in particular, are also presented.

Reasons for Student Consumerism

Education was once considered a public good but that concept is fast being eroded. Gary Webster (2003) is of the view that the population as a whole has contributed to the concept of students being classified as consumers, rather than learners. He argues that the general population, through the state, has demanded the justification of the university's work as a public good. There has been a continuous demand for universities and higher education institutions to account for the large amount of spending and to justify the returns in more concrete terms.

In more recent times, higher education institutions, in response to the demands from their various stakeholders, have embraced the market discourse. Webster (2003) drew attention to this fact. He pointed out that the higher education literature was now replete with "language, symbolism and metaphors of popular business management." (p. 3). Phrases like "best practice," "list of indicators (benchmarks)," "effective investment," and "long-term returns" now form part of the vocabulary of managers and administrators of higher education institutions. It is no wonder then that students see themselves as consumers, and therefore display behaviour patterns associated with "consumers" rather than those associated with "learners."

The amount of government funding given to some higher education institutions in several countries depends on the number of students admitted to the institutions. In the American system, to qualify for state funding, the university must show a certain percentage of persons from the different ethnic groups. However, most institutions aim to get the best students, which would eventually lead to having the best-qualified graduates. While some universities more or less sell themselves simply by their age-old reputations, the newer universities are now embarking on different kinds of marketing strategies to attract students to their institutions. In so doing, the prospective student is classified as a consumer and the university's offering, education, is classified as a product.

Another phenomenon that is driving student consumerism is the number of higher education institutions that are in the business for making money. There are institutions that do not see education as a necessity for the advancement of knowledge but view the sale of educational products and packages as just another form of business. The more packages that are sold the

more the bottom line enlarges. These organizations, although they incur the wrath of some educators, operate under the straight business maxim of demand and supply. The leaders of these organizations are of the view that as long as there is a demand for a product—in this case, education—and they are in a position to satisfy that demand, then they should do so regardless of the short- or long-term consequences. Students, of course, will gravitate to the package that would essentially guarantee success, whether they learn or not. Noble (2002, p. 29) sees this as the "deprofessionalization" of the professoriate, which was experienced by physicians before investors shifted their focus from health care to education.

Evidence of student consumerism was clearly brought to the fore in an empirical study carried out by Delucchi and Korgen (2002) among undergraduate sociology majors in a particular college. Their goal was "to assess the extent to which students approach college with a customer service orientation" (p. 103). The results were astounding since the evidence suggested that students were more concerned about getting a certificate than obtaining an education. Almost 43% felt that if they were paying for their education they were entitled to a degree, and 73% were of the view that they "would take a course in which they could learn little or nothing but would receive an "A" (p. 103). Some went even further: 24% were of the view that in grading examinations, the lecturer should take into account the grades that were needed for the students to get into graduate school or to keep financial aid. The evidence therefore suggests that there is a large percentage of students who are not prepared to be a part of the learning process but who expect to be handed a grade A certificate at the end of their stay. The researchers argued that their findings "buttress arguments concerning student consumerism in higher education. The results support the characterization of a student culture subscribing to the idea that higher education operates as a consumer driven marketplace…." (p. 104).

In summary, therefore, stakeholders are demanding that higher education institutions operate in a more businesslike fashion. Investors are selling education just like any other good or service, and students have latched on to the concept of being customers rather than learners. Some well-meaning institutions may be going along with all that is happening because they want to survive in this fiercely competitive environment. There are, however, both disadvantages and advantages associated with student consumerism. It is up to higher education organizations that are really concerned about education to ensure that the advantages outweigh the disadvantages. I will first discuss the disadvantages of student consumerism.

Disadvantages of Student Consumerism

Robertson, (2000) argued that changes in higher education in the 21st century would result in the student being the "principal architect of the institution's character. Student choices and student behaviour overall will drive institutional responses in all but the most prestigious and well funded research institutions" (pp. 79–80). The realities of changes in higher education so far seem to be proving him correct. Students are being classified as customers and consumers, and higher education institutions are reacting to this new classification.

There are several disadvantages associated with student consumerism in higher education institutions. Franz (1998, pp. 63-64) argued that the consequences of treating students as customers have resulted in classrooms becoming a popularity contest replete with video games and MTV, pedagogy becoming entertainment, unrelenting grade inflation, and the embracing of a famous departmental store customer relations policy of "keep the student-cum-customer happy and give him or her what they want." Many higher education institutions are being forced along this route because their very survival hinges on students' ratings. The onus of student learning seems to now lie solely with the teachers who must keep the students happy at all times.

Singh (2002, p. 21) posited that treating students as consumers has resulted in the relegation of students to the role of passive recipients in their educational pursuits. Students, therefore, are no longer interested in taking an active role in their learning. They expect their teachers to provide all the necessary ingredients to allow them to gain their certificates in the shortest possible time.

The benefits of tertiary education cannot always be measured by students at the end of each course. Most students realize and understand the benefits of their tertiary education many years after completing their programme. In completing the assessment that they are required to do immediately after the completion of a course, most students will not give their teachers credit for their long-term gains. Singh (2002) quite rightly argued that asking a student to rate his or her teacher (all part of the student consumerism ethos) "is constitutive of the notion of instant gratification for students; it does not appreciate that there may be a time lag between students' learning and their appreciation for their learning" (p. 21).

Educators, as well, may be tempted to remodel their offerings to ensure high ratings. In a market setting, the customer is always right; but in a tertiary education setting, allowing the customer to be always right may prove to be detrimental to the student in the long run. Sacrificing of intellectual rigour to gain popularity will not lead to the development of a culture of intellectual curiosity, and will not allow students to develop a social view and prepare them to think critically or to cultivate their minds (Singh, 2002).

Since students are now being classified as consumers, education is now being thought of as a commodity that can be bought and sold. However, the commodification of higher education seems to bring with it more disadvantages than advantages. The concept of education as a public good has been attacked on all fronts. Naidoo and Jamieson (2004) posited that the general belief is that it is "too costly, too slow to change, and too inflexible" (p. 8). The new global trend is that education should be treated as a commodity and traded on the international market like any other good or service. The selling of education packages is not an altogether new concept since many persons were educated years ago by doing what were then called "correspondence" courses. The onset of the Internet and eLearning technologies has made it easier for tertiary education to be packaged and sold globally.

There are also other disadvantages associated with the packaging and selling of tertiary level education. For example, Naidoo and Jamieson (2004) argue that in order to keep the cost of production down, a standardized product that could be used in any part of the world would be produced. They argue that while this approach would ensure healthy financial returns for larger developed countries, it may prove to be problematic to smaller developing countries, which may not have the resources to develop indigenous higher education systems that they too could export. This view is supported by Moja and Cloete (2001, p. 247), who brought to the forefront the disadvantaged position of developing countries. As with all other goods and services, packages of varying quality may be sold. The possibility therefore exists that larger, developed countries would be in a position to buy higher quality, more expensive packages while developing countries may become the dumping ground for low-quality packages. The prospect of quality higher education reverting to elitism will therefore become an issue once again. Hall (2001) elaborated the disadvantaged position of developing countries with respect to the commodification of higher education. He posited that not only would the developing world be subjected to low-cost, low-quality packages of information, but that such packages would probably bear no relevance whatsoever to the culture of such countries. The stunting of indigenous capacity in research and education would therefore become a real possibility since it would definitely cost less to purchase material prepared by the developed world than to spend huge sums of money (which may not be readily available) on developing material that would be more relevant to the users of the material.

David F. Noble (2002), who over the last three decades has been a critic of the "business-model" of higher education in the United States, went to great lengths to spell out the meaning of education and commodification. He posited that education was different from training in that "training involves the honing of a person's mind so that it can be used for the purposes of someone other than that person" (p. 27). In essence, training entailed "a radical divorce between knowledge and self" (p. 27). On the other hand, he argued that education was the complete opposite, in that it entailed "not the disassociation but the utter integration of knowledge and the self, in a word, self-knowledge" (p. 27). Therefore, he was of the view that knowledge and the knowledgeable person were inseparable.

In its classical, restricted sense, Noble (2002) defined a commodity as "something created, grown, produced, or manufactured for exchange on the market" (p. 27). Based on that definition, he posited that the commodification of higher education referred to "the deliberate transformation of the educational process into commodity form, for the purpose of commercial transaction" (p. 27). Having clearly defined education and commodification, Noble argued that the commodification of education required the interruption of the educational process and the separation of that process into saleable packages. Ultimately, then, attention is shifted from the educational experience to the production of an assortment of course materials broken up into syllabi, lectures, lessons, and examinations.

Noble (2002), then, is of the view that the commodification of higher education not only interfered with the professional autonomy and working conditions of educators, but it also interfered with our understanding of education itself. He also identified a number of disadvantages associated with the learning process in a commodified environment. He reiterated that commodified systems tend to be lean systems which eliminate those elements that are perceived to be not strictly necessary. This lean system can cause the following:

1. No adjustment by teachers/instructors to meet the needs of individual students.

2. No group work, which denies students the opportunity to develop social and interpersonal skills and the benefits of peer group learning.

3. Very few, if any, social facilities that could help the promotion of peer interaction.

Naidoo and Jamieson (2005, p. 274) outlined another set of disadvantages associated with the commodification of higher education. They suggested that the use of performance indicators and league tables by prospective students and parents to inform their choice of higher education institutions could result in another set of disadvantages. It is possible, then, that some institutions may be tempted to invest valuable resources to stay atop league tables instead of investing in achieving their missions. Universities,

as well, may be pressured into the lowering of the failure rate and the awarding of more first class degrees to present a good picture in the league tables. In this scenario, the essentials of high-quality learning may be dispensed with. Ball (2003, as cited in Naidoo & Jamieson, 2005, p. 274) identified these as "hard to measure" emotional attributes such as commitment to the pedagogic process, enthusiasm for the subject, and flexibility in dealing with different needs of students. In essence, Naidoo and Jamieson hypothesized that "attempts to restructure pedagogical cultures and identities to comply with consumerist frameworks may unintentionally deter innovation, promote passive and instrumental attitudes to learning, threaten academic standards and further entrench academic privilege" (p. 267).

Naidoo and Jamieson (2004) added the effects of commodified virtual higher education and its inherent inability to provide actual learning opportunities to the list of disadvantages. They posited that the process of feedback to students had been altered, and argued that while feedback in the form of multiple-choice tests provided the students with an update on their progress in each course, it was not a "substitute for detailed, qualitative feedback required for high quality learning" (p. 11). In addition, they argued that because of the close links between the commodified system and the viewing of students as consumers, emphasis is shifted from the teachers providing feedback to the "students producing feedback to staff on their teaching 'performance'" (p. 11).

Commodification has also led Kawalilak (2006) to cry out for a reclaiming of space and dialogue in adult education. She reminisced that adult education once went "beyond formal learning and a business and industry agenda" (p. 1) and looked after the long-term needs of societies. She quoted Scott, Spencer, and Thomas (1998) to bring home the point that adult students' learning, research, and action were guided by the values revolving around equity, democracy, and social transformation, which in turn influenced policy makers' goals.

Kawalilak (2006) provided a history of adult education by summarizing the contributions of renowned figures in the field, namely, John Dewey, Eduard Lindeman, Paulo Freire, and Phyllis Cunningham. Dewey cautioned against the

trend of educating for the present and Lindeman suggested a philosophy of learning throughout one's lifespan. They both "emphasized the critical importance of education beyond the immediate, the known and the tangible" (Kawalilak, 2006, p. 3). Freire, on the other hand, stressed the collective dimension of learning and its role in helping people to solve their own problems, while Cunningham advocated that education was not only about attaining knowledge but also about the politics of that knowledge. These four early contributors, therefore, all saw adult education as a continuous process for the long-term benefit of humanity. However, due to the present alignment of education with big business, the philosophy espoused by the early contributors has now given way to what Cunningham (1993) called the "learning for earning" mentality. Such a mentality would maintain the profit-making status quo, but would also steer "adult learners further and further away from a truly educative experience" (Kawalilak, 2006, p. 4). Due to the shift in emphasis, where adult education is now subjected to supply and demand, there is a legitimate fear that adult education will now be "directed only by the demands for vocational training, credentialism and the general requirement to prepare [adult learners] to meet the needs of the global economy" (Scott, Spencer, & Thomas, 1998, p. 13).

I will now turn to looking at the advantages of student consumerism.

Advantages of Student Consumerism

The advancement of corporations into higher education could be considered either a disadvantage or an advantage of student consumerism, depending on the angle from which it is assessed. Couturier (2003) estimated that there were over 2,000 corporate universities worldwide, which translates into direct competition for public institutions because of the university service that such universities provide. Naidoo and Jamieson (2004) advised that there were many corporations that were also offering a partial service to universities, for example, firms that provide the information technology (IT) capability and related software support. Publishing companies, in their quest for new markets, have also begun to align themselves with universities.

Higher education institutions can use this heightened interest in education by corporations to their advantage. Corporations can provide much needed funding for the day-to-day running of institutions, hands-on opportunities by way of internships for students, and real-life opportunities for researchers to move research to actual policy and the development of machinery in an engineering education context, for example. A win-win situation could, therefore, be achieved so that all parties involved could share in benefits associated with such ventures.

From the students' point of view, the partnership of universities and corporations provides them with choices that were not available before this present era. Since students and their parents and/or sponsors would definitely want what they consider to be the best, public institutions have been forced to "tidy up" their offerings, which in turn would provide higher education consumers with a wider, better quality pool from which to choose. Therefore, the phenomenon of corporations whose core business is education for profit, and the partnering of corporations with higher education providers, would be considered irksome and not in the best interest of education for the traditionalists, but modern, trendy, and pragmatic for those persons who view education and training as one and the same.

Another relatively new aspect in the management of higher education institutions is the heightened role of marketing. Since higher education institutions operate in a competitive environment, marketing plays a vital role in their operations. Baldwin and James (2000) posited that:

> there is an urgent need for young people to receive more specific information about the nature of the broad fields they are considering, the kinds of careers that these lead to, and the career prospects in those fields in the light of job market developments. (p. 146)

Although they felt that this may not be the responsibility of individual universities but the responsibility of individual governments, the consumerism now associated with higher education institutions demands that each

university provide information specific to its characteristics and offerings, in an effort to ensure that students make the "right" choice, and in so doing woo the students who would be most compatible with its offering.

An example of this is the information provided by the University of Bath with respect to its offering of the Doctor of Business Administration in Higher Education Management (DBAHEM). Because of the demands of the jobs of higher education administrators worldwide, it is very unlikely that such persons would be provided with leave over an extended period of time to enable them to pursue this degree. The degree is specifically targeted at seasoned, full-time higher education administrators, and one of its distinctive features is to give "particular priority to the development of candidates as managers, the so-called 'reflective professional'" (University of Bath, 2006, p. 3). Its client base is international, and the programme is participative and promises that each cohort would be kept to the right size and focus. Bath has therefore carved out this niche by targeting a specific group, providing a part-time modular programme, and using both face-to-face (two compulsory residentials per year) and the Internet to interact with the students in the programme. This information is clearly communicated to all prospective students in its information brochure.

Another example of targeting a specific group is the initiative by UWI to reach out to students who live and work in rural communities. The Distance Education Centre, which was established in 1996, coordinates the use of IT technology to lecture to and communicate with these students who can now pursue their university education in their home village. This releases them from the hassle of travelling to the campus on evenings. However, those persons who prefer face-to-face education can do so by attending the Evening University, which so far is available only in the Faculty of Social Sciences. In order to capture the market, in the face of competition from several offshore universities, UWI proudly advertises day, part-time, evening, and distance programmes. Teaching staff must therefore be proficient in face-to-face and distance teaching. The necessity for multi-skilled teachers is therefore reflected in all advertisements for teaching staff. Dealing professionally with the marketing aspect of consumerism in higher education can redound to the benefit of prospective students and must therefore be considered as one of the many advantages of student consumerism.

The time frame for feedback and the quality of tutor feedback is another advantage associated with student consumerism. Before the use of the Internet was so commonplace in the interaction between tutor and pupil, the issue of, and receipt of, feedback took a much longer time to be accomplished. In fact, in many cases written feedback was non-existent, since limited oral feedback was sometimes given because students and tutors/lecturers saw each other almost on a daily basis. While traditional educators associate eLearning with the commodification of higher education, Naidoo and Jamieson (2004) went to great lengths to emphasize that the "right blend of conventional and eLearning could produce a richer and more rewarding learning environment than either face-to-face or eLearning ever could by themselves" (p. 13). They argued that since it was now possible for students and tutors to communicate with each other online, then the timeliness and quality of student feedback would be significantly improved. They are of the view that the improved quality and timeliness are not only vital to effective learning but also that the use of the Web links and the Internet opened up a rich source of learning resources for students. This new dimension associated with student learning ties in with the business consumerist adage that service must be timely and effective.

In this consumer atmosphere in higher education institutions, the student is now considered a powerful player. This power, if wisely and properly used, could be beneficial not only to the student but to all the other players involved. The students' choice of higher education institution would be informed by a number of factors, inclusive of the institution's teaching and learning patterns. In view of the might of the student, teaching staff would be strongly encouraged by the administration to pay more attention to their quality of work. At some universities, for example, the University of Bath, there is a dedicated Pro-Vice-Chancellor for teaching and learning, and at UWI, the administration saw it fit to establish an Instructional Development Unit (IDU) on each campus, which is mandated to assist lecturers in

becoming competent in the teaching aspect of their job. These initiatives, which are very important for the long-term benefit of the students, are also of great benefit to the institutions that are challenged to come up with new and improved ways to ensure that they get to and remain at the upper end of the table of top-class universities.

Of course, the question of quality is an important factor where teaching and learning is concerned. Most, if not all, accredited universities, have a built-in quality assurance mechanism. This mechanism takes the form of in-house quality assurance units and external accreditation. In order to ensure high quality and, by extension, accreditation (both necessary to stay competitive), a large amount of effort and money are budgeted. At UWI, Quality Assurance Units, which fall under the supervision of the Board for Undergraduate Studies, were established within the last decade. All programmes are subjected to a formal internal assessment, and must report within one year on the progress of recommended changes. Universities in Hong Kong have also placed a great deal of emphasis on quality issues. Tsui Chung Bing Sum (2002), in a proposal for the upgrade of her master's thesis to Ph.D level, advised that quality had always been an implicit concern in higher education in Hong Kong since the establishment of its first university. However, due to the unprecedented expansion in higher education "formalized and systematic quality assurance mechanisms began to evolve in the early 1990s" (p. 1). She argued in her proposal that the changing contexts begged for the need to revisit the concept of quality in Hong Kong universities. She identified the changes that affect higher education:

> at professional-pedagogic level, at the institutional level and at systems level with new variables, which include new providers, new media, provision that is cross-sectoral, transnational and multinational, varied locations, new curricular forms and content, new or changing qualifications. (p. 1)

and was convinced that these changes would challenge the conventional mode of operations. Quality issues, regardless of institution and country, are profound and must be placed high on the agenda of higher education management. The advantage of having many players in the higher education market, which in turn provides the students with more choices, has now led higher education institutions to pay particular attention to the quality of education offered to their students. This can only be beneficial to both students and lecturers.

The associated services, other than teaching and learning, provided by higher education institutions can also be improved when students are seen as customers. Higher education administrators have begun to pay particular attention to the counselling service provided; provision of infrastructure for disabled students; safe, secure premises for both students and staff; and the provision of nutritional food for students, especially those who live on campus.

Miller (1979) argued that the consumer movement was growing rather than shrinking, and therefore felt that it was becoming more and more apparent that all students had "the right to receive accurate and realistic information on what to expect from their counseling service" (p. 76). Miller was of the view that if school counsellors structured their counselling sessions correctly, the student would "take a more active role in the counseling process, know what to expect, listen more attentively and contribute more significantly to the session" (p. 77). Miller was therefore advocating that if you treated and respected the student as a consumer, then the outcome would be beneficial to both the student and the counsellor.

Students with special needs are also benefiting from the awareness that students are indeed consumers. Special schools are now giving way to the integration movement, where institutions are now making provisions for students who are disabled in one way or another. In 1991, the physical infrastructure to accommodate wheelchair-bound students at UWI was non-existent. Some hurried measures were quickly put in place when such a student was admitted to the institution and the administration became painfully aware of the inability of that student to get into the washrooms or to access classrooms that were above ground level. Since then, all existing buildings have been remodelled to accommodate such students and such features are factored into all new buildings. Recently, the campus management went a step further by setting up a

special unit to coordinate the needs of students with any kind of disability, physical or otherwise.

In today's world, the question of security is uppermost in the minds of most parents and some students when choosing an institution to pursue higher education. Educational institutions are not immune to what is happening in the world, and since their premises are seen as fertile ground for predators of all kinds, institutions, in an effort to ensure survival, are placing a high priority on this aspect of their administration. The student identification card is no longer only being used to access books from libraries but is now also being used to gain access to buildings. These and other measures are being implemented to ensure that the consumer—in this case the student—is assured of a relatively safe place in which to operate.

In this market-driven environment, the availability, price, and extensive choice of food are also factors that some prospective students may pay particular attention to in choosing a higher education institution. The nutritional aspect of the food provided is also now being considered as an important factor. The Head of the Medical Unit at UWI is seeking to determine the reasons for weight gain by students during their stay at the university. Dealing with students as consumers has therefore initiated interest in aspects of their well-being other than their educational pursuits.

As outlined earlier, there are several disadvantages associated with student consumerism. However, it will be most useful to examine both the disadvantages and advantages with a view to clearly identifying the management implications with respect to all that is now happening in higher education. I will now, therefore, discuss the management implications.

Management Implications

Based on the disadvantages and advantages discussed above, there are key areas that managers/administrators of higher education should pay particular attention to in order to address some of the challenges posed by consumerism in a mass higher education system. Naidoo and Jamieson (2005) suggested some specific areas for investigation. They suggested that particular attention should be paid to the changing form and structure of the curriculum, which is now under pressure for commodification.

If carefully investigated, it may be possible to come up with a curriculum that could be delivered in the non-traditional medium but at the same time meet all the quality requirements.

Another area suggested is the relationship between commodification and the massification and democratization of higher education. Because of the use of non-traditional methods of imparting knowledge, many more persons are now exposed to higher education. However, every effort must be made to ensure that massification does not lead to a sub-standard commodity. In many institutions, administrators face the tremendous task of educating more persons with limited resources, and it can be very challenging in ensuring that all students, regardless of their background, are treated equally.

Baldwin and James (2000) suggested that:

> there [was] an urgent need for young people to receive more specific information about the nature of the broad fields they are considering, the kinds of careers that these lead to, and the career prospects in those fields in the light of job market developments. (p. 146)

Although they were of the view that it was not necessarily the responsibility of universities to provide that information, I am suggesting that universities stand to gain tremendously if they do accept that responsibility. One way of doing so is by setting up career fairs on university compounds, which would provide prospective students and parents/guardians with first-hand knowledge of what each university had to offer. Interest would certainly be heightened in several areas if prospective students and visitors could meet with university officials and their respective corporate partners (where there is such a relationship). Students would therefore be provided with the information suggested by Baldwin and James. In this way, students have an opportunity to compare their desires with the information provided on the premises, where desire could eventually be turned into reality.

The heightened role of marketing, which was posited as an advantage earlier on in this paper, is another area in which managers must be prepared to invest in a more tangible way. Baldwin and James (2000) are of the view that the current

marketing strategies of many universities are strong on rhetoric but weak on tangible details. For some traditional institutions, the concept of marketing is almost non-existent. However, in this era of the massification of higher education, Baldwin and James suggest that strong, tangible details will allow students to make an informed choice of the "course which is right for them, given their aspirations, talents and preferred learning styles" (p. 146). Higher education administrators, at least in some Commonwealth universities, have seen the need for strong marketing departments. To highlight its importance, the Association of Commonwealth Universities organized a categorized marketing competition in 2005, at which the St. Augustine Campus of UWI won the Newsletters and Bulletins category with its *St. Augustine News* (STAN) magazine, and the Prospective and Student Recruitment category with its *Undergraduate Student Prospectus*. Based on the success of this initiative, and recognizing marketing as a means of business development, it is envisaged that many more universities will soon join the bandwagon.

However, Drummond (2004) has suggested that the adoption of marketing techniques within the higher education sector may lead to the unexpected challenge of the problem of consumer confusion. He advised that the higher education sector should learn from the commercial sector in giving serious consideration to the implications of the effects of such confusion, since confusion does not benefit the customer. Additionally, he "argued that confusion is not in the long-term interest of [the] provider" (p. 318). Quoting from Mitchell and Papavissiliou (1999), he specified at least six negative outcomes associated with the problem:

- The creation of decision paralysis: when the consumer is overwhelmed by the decision.

- The altering of consumers' choice. Confusion tends to make consumers less brand loyal, and they may rely solely on price as an indicator of quality.

- The making of decisions fraught with undue amounts of uncertainly, frustration, and dissonance.

- The making of choices that result in poor or non-optimum product utilization. Inadequate

understanding, fostered by confusion, can result in the product/solution chosen failing to meet the consumer's specific needs.

- The confusion of consumers, who are then more likely to misinform others and spread inaccurate or irrelevant information by word-of-mouth.

- The delaying of decisions to clarify choice and make use of confusion reduction strategies.

Careful management aimed at avoiding consumer confusion must be the goal of higher education marketing managers, in order to deal with the prospective student who "is increasingly faced with a bewildering range of product offerings and decision relevant information" (Drummond, 2004, p. 317).

Higher education educators also have the unenviable task of moving students back to thinking of themselves as lifelong learners and not merely simply consumers. Knowledge is not stagnant since information learned today could become obsolete by tomorrow. As well, it is not unusual to hear corporation managers complain that a number of university graduates lack problem-solving skills. As maintained by Noble (2002), training is different to education and it can therefore be argued that one must first be educated before one can be successfully trained. Finger and Asun (2001) noted that books published by adult education publishing houses were more about training than about social action, and drew attention to the fact that where adult educators for social action persist, they were the ones who were instrumental in solving problems that the State was no longer willing or able to address. This led Kawalilak (2006) to ponder whether this situation was not an opportunity for adult educators to reposition themselves "as leaders at the forefront of education policy and social reform" (p. 6). Young students must therefore be made to understand that the education gained in their undergraduate years must be a stepping stone to continuous learning, which would be beneficial to both themselves and society as a whole.

Having discussed the management implications, I will now look at the implications for the St. Augustine Campus of UWI.

Implications for the
St. Augustine Campus, UWI

In view of the challenges posed by mass consumerism in higher education, UWI embarked on several initiatives in an effort to woo students, educate them, and at the same time look after their well-being during their stay at the university. With respect to the St. Augustine Campus, the focus during the 1996–2001 period was on infrastructural upgrade. During the 2001–2006 period, the emphasis shifted to more strategic issues. Efforts have been made to:

- strengthen the the IT capability on the campus;

- sensitize staff to the importance of using the facilities of the IDU to help with course delivery;

- adhere to quality standards with respect to programmes and courses;

- improve the facilities and amenities for disabled students;

- be more collaborative with the private sector; and

- place a greater emphasis on highlighting the contribution of the university to the national community.

While the campus management must be commended for these initiatives, there is still room for expansion and improvement.

Information Technology

The Banner Student Administration System is an IT system that was initiated in 2001 on all three campuses. Each campus has reached different stages with respect to its implementation. At St. Augustine, a Banner Team was set up to oversee the implementation of the system. The Student Administration system is aligned to the Banner Financial System, which is used by Bursary officials on the campus. In 2006, 30% of applications for entry were done online and 70% were paper based. It is hoped that the figures will improve in subsequent years. In a recent review of the application and registration process, the Assistant Registrar (Admissions) reported that while overseas applicants were willing to use the online method of application, local students were not, since they reported that they did not trust the system. This resulted in some of them applying online and also submitting a paper application. In addition to fine-tuning the system in striving to get to the point of 100% online application, a public awareness campaign needs to be implemented to sensitize the local population to the benefits of using the online application system. However, IT management must then ensure that from their end there would be no glitches to undermine the local public's trust in the system.

Quality Assurance

The Quality Assurance Unit, which was established in August 2001, has two primary aims. The first is to maintain and enhance the quality of learning experience of UWI students and thus ensure the maintenance of appropriate output standards. The second is to provide assurance to the stakeholders—the students, their parents, employers, and the regional governments—of the continuing high quality and standards of the work of UWI (Whiteley, 1999). At present, there is one professional staff member in the unit at the St. Augustine Campus. Her task is onerous. She is responsible for conducting audits of the campus learning environment, supporting and organizing activities related to Quality Assurance Reviews, working with the Tertiary Level Institutions Unit (TLIU) on articulation issues, and liaising with campus and faculty administrations on all quality assurance and quality audit matters. Based on the size of the St. Augustine Campus, it is recommended that, in the short term, one other officer be immediately appointed. However, in view of the extent of the work being carried out by the unit it would be best served with three professional officers with a corresponding increase of support staff.

Teaching and Learning

Students need to move away from viewing themselves as purely consumers to being independent learners, and in order for them to get to that level, some aspect of the curriculum may need to be revisited. However, even when this is done, the delivery of the courses must be such that the learning derived will be long-lasting. Noble

(2002) is of the view that "education is a process that entails an interpersonal (not merely interactive) relationship between people—student and teacher (and student and student) that aims at individual and collective self-knowledge" (p. 28). He further argues that when people recalled their educational experience, it was not the subject or the course they remembered most, but the persons who changed their lives or their minds, or who made a difference to their sense of self. The role of the teacher/facilitator/lecturer is an important one, and while the IDU has been doing a tremendous job with the lecturers on campus, their programmes are not compulsory. This is not good enough in this consumerist age. My recommendation is that it should be mandatory for all teaching staff to attend the teaching and learning sessions conducted by the unit.

Partnerships with Corporations

The length of the degree programmes at UWI is of three years duration. More than 75% of the students are recent secondary school graduates. At the completion of their degree programme they all join the job market. Partnerships with corporations can therefore be beneficial to the students if a system of internships could be organized, which they can complete during the long vacation three-month break, or if an arrangement could be made where they could take a year off (between second and third year) to experience the world of work during their degree programme. With respect to the research and teaching staff, paid research within their discipline could be encouraged and formalized.

Students with Disabilities

An Academic Advising Disabilities Liaison Unit was recently set up. At the moment, the staff consists of one director, who is supported by an administrative assistant. In 2006, approximately 150 students who were admitted reported some form of disability. In trying to deal with the varying disabilities, the director has already reported that the unit will need much more staff in order to provide the level of service that will be required. The coming into being of this unit comes after the mandate to make every building on campus accessible to all students regardless of

their disability. The campus management must be commended and must, therefore, be prepared to provide as much as may be required to better serve this group of customers. The provision of the service and amenities could very well be the deciding factor of prospective students so challenged.

Marketing and Communication

When UWI began in 1948, it was the only regional institution available to students in the Caribbean. Today, there are several universities in this part of the world. The competition is fierce, not so much for the number of students but for the brightest and best, and so the university has positioned itself to be the institution of first choice for the annual scholarship winners. At the annual matriculation ceremony, the campus management at the St. Augustine Campus has publicly honoured the top five students in the selection examination taken by primary school students for entry to secondary school. The occasion is certainly a memorable one for the 11- to 12-year-olds, and it is hoped that seven years later, at the completion of their Advanced Level and/or Caribbean Advanced Proficiency Examination (CAPE) examinations, UWI would be uppermost in their minds. As mentioned earlier in this paper, the Campus Marketing and Communication Department won two categories in a competition organized by the Association of Commonwealth Universities in 2006. The Director, in her speech at the function held to celebrate the achievement, opined that she hoped that the top prizes which they had won would not only serve as a motivating factor to encourage her staff to do even better the next year, but also to highlight to the rest of the university community the importance of the contribution that can be made by a fully functioning marketing unit. It is hoped, therefore, that the university management will continue to see the need for its successes to be brought to the public's eye by means of the different media organized by UWI's Marketing and Communication Department.

References

Baldwin, G., & James, R. (2000). The market in Australian higher education and the concept of student as informed consumer. *Journal of Higher Education Policy and Management, 22*(2), 139–148.

Couturier, L. K. (2003, December). *The global challenge: Serving the public needs in the face of a higher education market.* Paper presented to the conference on Universities Challenged: New Strategies and Business Models, London.

Delucchi, M., & Korgen, K. (2002). "We're the customer – We pay the tuition": Student consumerism among undergraduate sociology majors. *Teaching Sociology, 30*(1), 100–107.

Drummond, G. (2004). Consumer confusion: Reduction strategies in higher education. *International Journal of Educational Management, 18*(5), 317–323.

Finger, M., & Asun, J. M. (2001). *Adult education at the crossroads: Learning our way out.* London: Zed Books.

Franz, R. S. (1998). Whatever you do, don't treat your students like customers. *Journal of Management Education, 22*(1), 63–69.

Hall, M. (2001). Education and the margins of the network society. In J. Muller, N. Cloete, & S. Badat (Eds.), *Challenges of globalization: South African debates with Manuel Castells* (pp. 224–243). Cape Town, South Africa: Maskew Miller Longman.

Kawalilak, C. (2006). reClaiming space and dialogue in adult education, *International Electronic Journal for Leadership in Learning, 10*(8). Retrieved July 17, 2006, from http://www.ucalgary.ca/~iejll/volume10/kawalilak_english.htm

Miller, M. J. (1979). Structuring: An answer to student consumerism in the school. *Personnel and Guidance Journal, 58*(1), 76–77.

Moja, T., & Cloete, N. (2001). Vanishing borders and new boundaries. In J. Muller, N. Cloete, & S. Badat (Eds.), *Challenges of globalisation: South African debates with Manuel Castells* (pp. 244–270). Cape Town, South Africa: Maskew Miller Longman.

Naidoo, R., & Jamieson, I. (2004). Knowledge in the marketplace: The global commodification of teaching and learning in higher education. In P. Innes & M. Hellsten (Eds.), *Internationalizing higher education: Criticial perspective for critical times* (pp. 37–51). London: Routledge.

Naidoo, R., & Jamieson, I. (2005). Empowering participants or corroding learning?: Towards a research agenda on the impact of student consumerism in higher education. *Journal of Education Policy, 20*(3), 267–281.

Noble, D. F. (2002). Technology and the commodification of higher education. *Monthly Review, 53*(10), 26–40.

Robertson, D. (2000). Students as consumers: The individualization of competitive advantage. In P. Scott (Ed.), *Higher education re-formed (*pp. 78–94*)* London: Falmer Press.

Scott, S. M., Spencer, B., & Thomas, A. M. (Eds.), (1998). *Learning for life: Canadian readings in adult education.* Toronto, ON: Thompson Educational Publishing.

Singh, G. (2002). Educational consumers or educational partners: A critical theory analysis. *Critical Perspectives in Accounting, 13*(5–6), 681–700.

Tsui Chung Bing Sum, C. (2002, June). *Quality in higher education: Policies and practices – A Hong Kong perspective.* Retrieved July 17, 2006, from http://www.utwente.nl/cheps/documenten/susutsui.pdf.

University of Bath. (2006). *Doctor of Business Administration in Higher Education Management: Information brochure.* Bath, UK: Author,

Webster, G. (2003, October). *Knowledge and higher education: Contestable spaces and strategic possibilities. Excerpts presented at the 6th European Student Convention – Palermo.* Available at http://www.esib.org/index.php?option=com_docman&task=doc_view&gid=173&Itemid=263

Whiteley, P. (1999). *Quality assurance and audit at the University of the West Indies: Procedures and practices.* Mona, Jamaica: Office of the Board for Undergraduate Studies.

Educational Administration as a Micropolitical Exercise

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Abstract. The administration of a school is usually perceived of as occurring within the confines of the school facility itself. This research seeks to highlight the reality of administrative procedure within the context of promotion to senior management positions in some denominational secondary schools in Trinidad. The data were gathered through interviews and questionnaires from practitioners in the field and from other key players in the promotion scenario. Key players in this research are teachers, aspiring school administrators, Church Board members, and members of the Teaching Service Commission. The qualitative analysis of the data brings to the fore pertinent voices that spell out for us those practices that manifest how micropolitics is manifested in the promotion process. The findings point to some consequences of micropolitical activity in the promotion process, and suggest a way forward for this selection process.

Introduction

In societies where traditions are held fast and have the capacity to shape future development, it is always essential to pause and reflect.

In the context of promotion, there have been dominant patterns and behaviours that have been engendered by and perpetuated by sociocultural determinants. This research examines the status and nature of the promotion process and procedures, whilst exploring the human element that is the controlling agent.

This research is a necessary bold look at human behaviour and social systems, specifically in an educational context. In the first instance, its major premise is that micropolitics is an underlying feature of promotion and leadership in the context of education. More specifically, its usefulness lies in its ability to cite and analyse instances of micropolitics and to trace its influence. The identification of these realities alerts us to the need to be more self-aware and self-critical if our professed professional and constitutional goals are to be realized. It compels us to confront the threat that micropolitics poses to equality and social justice. An examination of micropolitics penetrates the façade of professionalism and rectitude, and uncovers the reality of human frailty. It highlights the irony that although social systems are designed to facilitate fairness and objectivity, they are, in fact, the breeding ground for subsystems of bias, dishonesty, abuse, and unethical behaviour.

In Presbyterian secondary schools in Trinidad, there have been rumblings underground of dissatisfaction with the lack of Presbyterianism in the schools, and from teachers and even Church Officials, Board members, past and present candidates, and teachers that the promotion system in those schools is not fair.

The significance of this research lies in its dependence on the perspectives and the voices of its participants, many of whom have regarded this research effort as an opportunity to express opinions and share experiences that have profound personal and professional meaning for them. In an era where cross-cultural initiatives are being encouraged, and where developing countries are engaging in imported consultancy work, an insider's perspective can serve to counter the inappropriate adoption of "clinical" international theory, policy, or practice.

Additionally, this research provides the decision makers in the promotion context with some tools for self-appraisal and appraisal of the present system. The mere existence of this research is an opportunity to take stock, to recognize the researcher as partner in a collaborative effort, and to become agents of positive change.

The major aim of this research is to investigate in what ways micropolitics plays a role in the promotion process in Presbyterian secondary schools in Trinidad. It seeks to afford key players

the opportunity to voice their views and perceptions, and to share their experiences.

The research also aims to show that though formal procedures do exist, the power of the informal or the covert is not to be underestimated. It also seeks to demonstrate that in addition to practice, policy is also determined by micropolitics.

Most importantly, the hope is that, on the one hand, participants' involvement in the research would stimulate their own critical reflection as a forerunner to true emancipation and empowerment. On one level, emancipation from the colonial mentality is essential to the attitudinal and social progress of the Trinidadian. On the other more universal level, as human beings, emancipation from the narrow and negative possibilities of self affords one the opportunity to be open to more constructive and worthwhile potentialities such as community and nation-building, achievement of ideals, assessment of and provision for human needs, and the creation and realization of systems that provide for these.

It is hoped that the findings of this research would aid understanding of the context, and would serve as a stimulus for initiating continuing dialogue and transparency. The promotion context, hopefully, would be just one of the areas in which this approach to policy and practice would be evident.

Literature Review

The study of micropolitics is fundamentally the study of the human psyche and human behaviour in the social context. It is how the individual adapts to his environment that accounts for political behaviour. It is his nature to accommodate continuously as new needs arise out of shifting contexts. Man's social behaviour is not necessarily instinctive. It is generally conditioned or, as seen before, contrived.

The construction of our self, as we understand it, or our identity, as we perceive it, is a pawn of circumstance. We are conscious of our own acts and those of others so that we present ourselves so as to control the behaviour of others. As such, each individual is capable of consciously manipulating his own behaviour and that of others. Personal identity, therefore, is an ongoing process

of social construction, maintenance, and change (Garfinkel, 1967; Goffman, 1959; Paterniti, 2000).

Organizations contribute to the individual's identity by engaging in socialization consciously, unconsciously, and even surreptitiously. This is most blatant in the recruitment process where candidates are screened not only for skills and aptitude, but also for being able to "fit in." Socialization can be deemed somewhat synonymous with perpetuation. The significance of this lies in the role that history, both events and ideology, has played in the mosaic of the present. Berger (1963) expresses this idea superbly:

> Our lives are not only dominated by the inanities of our contemporaries, but also by those of men who have been dead for generations…since we cannot possible talk back to our ancestors, their ill-conceived constructions are commonly more difficult to get rid of than those built in our own lifetime. (as cited in Mangham, 1979, p. 118)

Nevertheless, the "inanities" and ill-conceived constructions perpetuated through tradition must be understood as such if they are to be changed. We would thus find that cultural determinants of behaviour are an inescapable reality.

Consequently, instituting change in an organizational setting calls for the management of a situation where individuals have been influenced by ideas of other groups to which they belong. Undesirable previous attitudes will have to be "unfreezed," altered, and "frozen" into a new attitude (Lewin, 1948), that is, in theory. It has been recognized that much of the work in the tradition of organizational theory and social psychology stresses cooperation and collaboration as behaviours to be encouraged, and much of it has ignored "'the darker side of humanity', man's evident capacity and occasional ardent desire, to screw his fellow man. … Men do cooperate and collaborate ...equally men compete and manoeuvre, cheat, lie…." (Mangham, 1979, p. 15). According to Mangham, "supervision of conflict, implicit decision-making and procedures, competitive as opposed to cooperative behaviour, and behaviour (both overt and covert) of a 'political' nature is still predominantly the order of the day in most groups" (1979, p. 177).

In any organization, individual differences will impact on decision making for political reasons—principally who wields power and has influence and who wants some. In the final analysis, the main actors, who are persons, seek to promote their personal goals through interpretation, negotiation, and presentation of self.

Especially in situations where uncertainty is rife, there is much reliance on political skill. In a single organization, also, there may be a variety of subsystems of political norms that are implicit and require sensitivity on the receiver's part. Some norms have to be learned through influence or observation. Organizational political behaviour has been defined as social influence attempts that are discretionary (not formally prescribed or permitted); that are intended to promote or protect the self-interests of individuals and groups; and that threaten the self-interests of others (Porter, Allen, & Angle, 1981). The bottom line is, according to Porter et al., that situational ambiguity or lack of structure may provide an opportunity, but it is personal stake that may provide the incentive to engage in political behaviour.

Such engagement necessitates the ability to interpret and assign meaning in the context. As we coordinate our assessments of others and prepare ourselves to be assessed, our natural tendencies emerge as we compare ourselves with others in order to establish our own self-esteem. Rivalry and jealousy ensue, resulting, in the extreme, in paranoid distortions. Mutual suspicions erupt as people project their own fantasies, creating a world of plots and counterplots (Zaleznik, 1970). One can imagine the potential harm that such personal concerns can bring to decision making within an organization.

Decision making can be inextricably linked to strategies that may be termed "micropolitical." Some have been identified by individual theorists. Pettigrew (1973), for example, identified norms that denied the outsider's competence, protective myths, secrecy, and control over recruitment and training. Additional strategies are highlighted by Handy (1976), including the distortion of information, the control of rewards, and the imposition of rules and procedures. The use of information is also discussed by Corbett (1991) and Anderson (1991); and Hargreaves (1991) highlights the use of mandates and rules as a formal organizational strategy. Confrontational tactics was a strategy used by parents to influence teachers (Corbett). In examining the behaviour of school principals, Anderson (1991) is also able to identify the practice of ideological control (appeals to school loyalty and solidarity), hiring techniques, and divide and conquer strategies.

Kleine-Kracht and Wong (1991) describe the behaviour of a superintendent as "chameleon-like," in that his behaviour changed in accordance with his goals. Formal-structural mechanisms were used in this case, including the "political" selection of administrative and management personnel. This micropolitical actor also made use of authority, coercion, divide and conquer tactics, manipulation of factions, and devil's advocate tactics.

The use of language as a feature of influence must not be overlooked. According to Gronn (1988), while "administrative power is the ability of the administrator to have his will and get his way" (citing Hodgkinson, 1978, p. 81), "the power to control must be worked at linguistically" (Gronn, p. 311). Goffman (1979) sees talk to be significant in that it allows speakers to monitor each other by observing each other. One can therefore "watch and suit one's words to the atmosphere" (Darling, 1967, p. 65). Talk is a necessary tool of influence and authority. In the first instance, talk enables the speaker to make known his version of something and, secondly, talk makes others take account of what is being said and has the capacity to influence them.

Many of the issues higlighted above have direct implications for the selection process for promotion, in that it is a specific socio-professional context or scenario where human behaviour unfolds with reference to a group, an organization, and, by extension, a cultural milieu. The promotion context presumes the elements of choice and decision making, even equity and fairness. Findings from research by Cobb, Vest, and Hills (1997) suggest that the organization's formal policies and procedures, as well as the supervisors, are perceived by workers to be responsible for procedural fairness. The researchers suggest that, coming out of this investigation, four new areas should be explored for a clearer focus on source perceptions of procedural fairness: how agents can influence how some procedures affect procedural fairness

perceptions more than others; how agents enact formal procedures (e.g., implementing communication policies); the effect of leaders' social accounts to subordinates (e.g., explanations); and the effect of situational factors. These elements point to the complexity of decision making, which itself is subject to the influence of perception and attitude.

Thus the attitude and perceptions of a discussion leader, for example, are significant to the overall operation of a group. The pertinence of the discussion leader and a chairman has been outlined by Klein (1963) who, in presenting conditions by how ideas can be changed, asserts that a good chairman is the greatest single asset that a committee can possess. Yet, as Klein further indicates, committees do not necessarily have to be handicapped by a chairman who is weak or otherwise ineffective; nor should they use him/her as a scapegoat for their own weaknesses. It is possible for a committee member to perform this role informally instead of allowing the procedure to break down. In this way, valid and useful contributions from diffident or low-status members will be encouraged.

Where important decisions are made governing people's careers, and where impressions, perceptions, attitude, and personal preferences are expected contributory factors to such decision making, the notion of truthfulness or honesty must figure in the collage of behaviour. Backbier, Hoogstraten, and Terwogt-Kouwenhoven (1997) conducted a study of situational determinants of the acceptability of telling lies. Lying is introduced as a "functional communication strategy," in that a lie is a message from a sender designed to influence a receiver in a certain way (Buller & Burgoon, 1994, as cited by Backbier et al., 1997). A lie is being regarded not as an end, but as a means to achieve a certain goal (Miller & Stiff, 1993, as cited by Backbier et al., 1997). Motive, situation, and relation (the other person) were found to be influential to the judgement of lies. There was a strong relation with the role of the motive of the liar and the relative importance of the situation.

Honesty and integrity as salient factors in decision making, and even policy making, are pertinent to the questions of power struggles and political conflict within organizations or groups. As Bacharach (1988) comments, "although a dominant coalition may remain in place for an extended period of time either through astute political maneuvering or the relative quiescence of the district, no coalition is sacrosanct" (p. 284). The dynamics of coalition emergence, which is always related to motive, presents concerns with regard to the soundness of ethical practice and the idealism of altruism.

In any promotion scenario, it is up to the selecting team to ascertain whether an individual is the most suitable according to their criteria. One would assume that the personal characteristics—the qualities, skills, disposition, knowledge, attitudes, values, feelings, beliefs—would play a significant role in selection for leadership positions (Blase, 1991). Valid criteria and reliable procedure may be an unrealistic ideal in a context where impressions, and withholding and editing of information are determinants of control and monopoly. The selection interview may even be viewed as a composite of influences that control the future of the specific school and the specific individual. Dipboye (1994) describes the employment interview as social in nature, utilizing a dialogue to gather information about the applicant. Ferris and Judge (1991) and Howard and Ferris (1996) concluded that an applicant's self-promotion and non-verbal behaviour influence, to a large extent, the interviewer's process. The interviewer decides upon the level of similarity between the applicant and himself or herself, and whether he or she likes the applicant. The interviewer then judges the applicant's competence and suitability for the job in question. This research suggests that interviewers should not only be trained, but trained within the context of the organization involved. The importance of the interviewer in the selection process cannot be overstated. Training may be the compromise in the effort to control the possible subjectivity of an interview situation. Apart from the interplay of information in an interview, there is also the "sword dance" of impression management (Baron, 1986; Gilmore & Ferris, 1989; Goffman, 1971; Tedeschi & Reiss, 1981; Wayne & Kacmar; 1991; Wood & Mitchell, 1981). More recent research has found that impression management tactics, especially self-promotion and ingratiation behaviour, run the risk of creating undesirable impressions on interviewers (Crant, 1996).

Interviewer strategy or behaviour has an undeniably crucial role to play in interview outcome, as it affects the behaviour of the interviewee and, consequently, how he or she is evaluated. Question wording, for example, may influence the way an applicant responds. Question wording has been examined in relation to face-management theory (Holtgraves, Eck, & Lasky, 1997). Results from a study by Holtgraves et al. showed that when questions were worded so that the respondent could maintain face while answering in a socially undesirable manner, there were lower rates of socially desirable responding. By facilitating the respondent's honesty in responses, a selection process may stand the chance of being more valid.

Research done so far shows clearly a need for bold entry into research that can marry elements of selection, promotion, and micropolitics, and the Church as an organization, all in the context of schools. There is clearly room for micropolitical studies in small societies, especially in developing countries. Though a number of researchers have focused on issues in assessment and recruitment, not many have included the voices and input of the full cast of players in the promotion scene.

Methodology

The methodology chosen for this research is guided by the need to understand how subjectivities are produced and the influence of historicity on social organization and behaviour. The qualitative approach to this research will enable the research itself to make "the comfortable strange and disconcerting" (Dippo, 1994, p. 203). It will also provide the opportunity for the researched, including researcher, to engage in self-criticism and self-reaction through introspection. It is the vehicle through which the researcher will attempt to "peel back the leaves of understanding" (L. Barton, personal communication, 1999) and to "unsettle questions, texts…to challenge what is, incite what could be, and imagine a world that is not yet imagined" (Fine, 1994, p. 30). It is is also influenced by the postmodernist stance that multiple voices do coexist, thus suggesting varying interpretations of reality.

This researcher finds that the qualitative approach allows for the understanding of circumstances and conditions that are central

elements of the particular research context (Rubin & Rubin, 1995). Understanding, however, though it comes with the "baggage" of bias and subjectivity, can still be achieved through enquiry that is consistent, transparent, and reflexive. The reflexivity and transparency of the research also commit the researcher to the limitations inherent in the situational reality of the research. One example of this is the limited capacity of the emancipatory paradigm to have an encompassing role within this research context, which is limited.

To a large extent, data collection is largely dependent upon the telling of "stories" and, as such, the role of language in the construction of worlds (Usher, 1997) must be considered. The choice of data collection methods and data analysis methods is also influenced by the significance of language as powerful and political. Reflexivity guides the essential peripherals of the research, such as journal entries, memos, and notes, which shape the "progressive focusing," as delineated by Arksey and Knight (1999). The unfolding of this research can certainly be seen as "progressive focusing," since fieldwork directs and redirects foci.

This researcher is both insider and outsider. This may have had some effect on data collection, but I have sensed that both could have been an advantage. "Insiderness" has certainly helped with access and a positive attitude by some to the research.

Data Collection and Analysis

Pilot interviews informed the interviewing of 44 persons, including a key informant, Board/Church personnel, present principals, present vice-principals, past principals, past vice-principals, present candidates, past candidates, teachers, and Ministry of Education/Teaching Service Commission (TSC) officials.

Pilot questionniares guided the questionnaires issued to 494 teachers from 31 schools, of which 322 were returned and analysed. The sample of schools was purposive so as to include 4 out of 5 of the Presbyterian schools (the principal of one school did not approve participation by staff) and 27 non-Presbyterian schools. Data were also gathered from 44 casual, unplanned conversations and the researcher's insider accounts.

Data were coded and categorized under broad headings initially and eventually re-coded to create new subcategories. Care had to be taken not to lose the human element of the research. As such, many of the actual words of respondents have been used in the data presentation and analysis.

Findings and Discussion

Micropolitics Exists in the Promotion Scenario

Comments of influential persons and of candidates specifically state that there is a political element in promotion or promotion-related activity, including Church involvement. On varying occasions, individual Church Officials commented on "*the stress of Church politics,*" with one adding that "*in the Presbyterian community you have a little more bacchanal than in a typical small society.*" With regard to one promotion scenario, one principal admitted that a "*lot of politics were involved,*" while a past vice-principal "*wasn't aware of the potential and actual tensions involved.*" A candidate for promotion "*was unaware (then) of the undercurrents ... the corruption*" and concluded that "*reality...depends a lot on politics*" and recalls that "*the vice-principalship of (School Name) was a very sort of messy situation re the build up.*" A Church Official recalls "*confusion... for (School name)*" and "*sweated.*"

With regard to the actual selection process, one candidate explained that "*educated people don't want to put themselves on the Board ... don't like the politics of the organization. The politics of the Presbyterian Church is the downfall in terms of the selection process,*" while a teacher declared that "*so much depends on the character of those engaged in the selection process. It matters little what system is in place if the system is accompanied by those more concerned with politics and not principles.*"

Actual Strategies Evident in the System

Lobbying/Canvassing. All statements in this category contained variations of terms such as *lobbying, canvassing, campaigning, influence peddling, arranged, their own candidate, press for.*

A past principal revealed that "*all kinds of canvassing of a very devious nature take place*"

and that in one scenario "*...they politicized the whole business of appointing people...just like how politicians want to ... indulge in patronage ... they become the agents of either organized prejudice or good decisions....*" Even Church Officials seemed to be aware that "*people do lobby for candidates*" and that "*some principals have their own candidates*" so that "*they will sit down night and day and will use telephone, just to keep you out.*" Corroborating such views, an influential person comments that "*very often, when recommendations come to Synodical Council, a lot of politicking goes on, canvassing goes on behind the scenes....*" Two teachers from Presbyterian secondary schools, respectively, are of the view that "*the system is not fair (and) candidates' friends and family lobby for them and generally the best person is not given the job but the one with the most connections,*" and that "*it is unfortunate that there seems to be too much lobbying for candidates rather than who really qualifies for promotion.*" While a Ministry Official guesses that "*there is a lot of campaigning and so on,*" a past vice-principal puts forward the view that "*the objectivity of the TSC perhaps balances the lobbying and biases of the Board.*"

Manipulation. Manipulation comes in many forms. Potential candidates become "active strategists" (Lyons, 1981) and become visible in Church or become involved in school management. One non-Presbyterian candidate, it is reported, was baptized in the Presbyterian Church three years prior to being appointed as principal. According to one candidate "*…people who never attended Church get themselves nominated to serve on Boards, preach and then finish with that,*" and another reports on one version of one such scenario by saying that "[Regularity of Church attendance] *was a blatant lie ... Because soon after he received the promotion he has discontinued his interest in the group...His attendance to Church has fallen.*" Verifying this type of occurrence, a Minister is of the view that "*...the link with Church will always be a problem. They have people sometimes who know how to play the game, they come and they get involved with the Church and they make sure that people who have to make the recommendation see them...and as soon as they get their promotion they back off.*"

Grooming. Grooming by a principal is one of the more common forms of manipulation. If a principal grooms a candidate, the general expectation is that that individual would be recommended. One candidate recalls that "*...the Principal had the teacher sign documents for him as Principal designate...I took these documents ...I said well, what is this? Is this an official post? Principal designate? It means that everything is being railroaded.*" A past principal recounted seeing a specific teacher "*with that kind of potential, and I started giving him extra responsibilities. Made him a Dean, Head of _____ Department...My view was not just getting the work done, but training for successors.*"

Teachers, too, have perceived the grooming practice to be the cause of potential conflict, but many have also described the conflict that can arise from appointing outsiders. In this case, the micropolitical strategy may be represented in the resistance of opposing staff. Words suggesting staff's strategy are *tension*, *clash*, *friction*, *not be welcomed*, *resentment*, *unacceptance*, *hostility*, *reception is cold*, *alien*, *like a bull in a china shop*, and *misfit*. So, the power to strategize is also held by the "minor" players—the teachers.

Many candidates also speak of other people in the system who encouraged them to apply for administrative positions. These efforts to manipulate a situation may stem from a fear of the unfamiliar and a need to know that the status quo will be maintained. Principals who have spent years labouring at an institution seem to think it is their duty to "pass the baton" on to someone who has an appreciation of their own efforts. They therefore find difficulty considering "outsiderness" and the potential "undoing" of all that they have managed to build and maintain as one of their life's major accomplishments. Notwithstanding that manipulation breeds inevitable lack of justice, the human need for perpetuation and stability is the pertinent factor here. From the perspective of an inside observer, the manipulation that is evident in the promotion process is akin to nepotism in organizations. Schools see themselves not just as individual communities, but as families.

Abuse of Position

The interview scenario. Candidates report sensing unfair biases with reference to their Church attendance, with one reporting being "badgered with questions about this log book" …and having "the distinct feeling that this [person] already knew who was going to be recommended." Tone and approach were found to be inappropriate as a candidate wondered if he was "at a scolding session…at a blaming session" and described the interview as "disappointment," "agony," "an inquisition," dealing with "frivolous matters," "niggling things that had nothing really to do with my Presbyterianism—if you want to call it that." The candidate was left with the impression that "obviously they knew I did not go to Church so they harped on that fact, and that behaviour at a particular interview was inappropriate as "half the people (interviewers) eating while half the people asking the questions." Even at the TSC level, there was the perception that the Commission had already decided "…It was not going to overrule the recommended candidate. It was going through the motions of giving me the satisfaction that I was being heard." By conducting unsatisfactory interviews, the Board is not fulfilling its role and shows contempt by making its biases blatant. Abuse of the interviewing process serves to undermine the morale of potentially well-intentioned and capable candidates.

Formal Mechanisms

Formal mechanisms constitute the façade that facilitates further micropolitical tactics. ***The Church Report*** in one mechanism that generates much apparent dissatisfaction among candidates for promotion. There is the perception that "regularity of attendance" at Church is interpreted in varying ways and that, according to one Minister, even "*Official Boards have so blatantly lied about the person's involvement and activities.*" Due to deliberately inaccurate Church Reports "*a committee has now been formed to look into ways of ensuring valid Church Reports,*" according to the then Chairman of the Presbyterian Secondary Schools' Board of Education. It is also possible that the Board's decisions can be

overruled by the Synod, which votes without having interviewed the candidates.

Teachers may choose to **challenge the system** by exercising their rights. One candidate reports about another saying that "even though the person may not have been genuinely interested in this case, she became interested because she realized that this was something to be challenged." Union activists also utilize this right to challenge according to one vice-principal.

Becoming members on Boards and Committees is another contentious issue. In this case, a Church Official refers to the Administrative Committee of a particular school, as one influential person reportedly desirous of "interfering" "*made sure…got on that Board [meaning Administrative Committee]…wanted to become Chairman,…didn't make Chairman…and now … has been trying to interfere with the school*."

The Church's Constitution, according to a Church Official, also has a role to play in control as "*the Constitution was drafted in order to eliminate some people from the Church hierarchy…in terms of the whole administration…to restrict some people who are vocal.*"

Non-action, in terms of implementing a formal mechanism, has resulted in frustrating candidates as "*the Board is not doing anything. The Ministry is not doing anything and I am there hanging.*"

A lack of clear procedures, the Staff Report, and the Synod's ability to overrule the Board's decisions are other formal mechanisms that enable the micropolitical activity on the promotion arena.

Control of Information

Candidates claimed ignorance about the criteria used for selection by the Board. One candidate felt that "*if it is based on factors that are not known, then…it is not what we call a level playing field,*" and another pointed out that "*if some people on the inside track know these things because somebody on the Board knows them and they mention it to them, well then they have a definite advantage.*"

With regard to feedback from the Selection Interview, candidates complained that they "*heard…through the grapevine…there is no feedback mechanism.*" They had "*no way of knowing unless somebody came behind their back*

and told me." When feedback is not formal, silence breeds speculation. The Board's justification may be that the TSC makes the final decision and that final feedback is their responsibility. The silence of the Board, however, places the candidate in a position of disadvantage. There is no formal channel for protest or query. The probing candidate is made to suffer the indignity of what is perceived by some to be soliciting information illegitimately.

Dishonesty/Negotiation/Game-Playing

The conditioned or contrived social behaviour of man allows him to accommodate to suit his needs. One influential person devised tactics to "beat the system," using someone else to voice his opinions. Even the interviewee is not without power, admitting to using his listening and interpretive skills to succeed in the interview: "*Depending on what you tell me, I can see way down the road where I feel you're going and I manipulate it. So if I feel you want to hear certain things ... But I did that in the Commission interview.*"

Another candidate claimed that although he had submitted an application for a position, "*the Principal and the Administrative Committee had not forwarded my application at all to the Secondary Schools' Board….*" Eventually, a formal protest was lodged and this candidate was appointed. So that according to this account, a deliberate attempt was made to sabotage this individual's chances. An ex-Board member and ex-principal recounted his own cheating at an interview, indicating that he changed marks on the score sheet to favour his preferred candidate.

Ad Hoc Practices

Ad hoc practices serve to perpetuate not only the inefficiencies of the system, but also the negative perceptions held by participants and observers, in addition to the culture of micropolitics. Several accounts reveal incorrect and inconsistent procedures while some are indications as to how these are perpetuated. Misinformation was seen to be one of the causes of dissatisfaction in the area of promotion. In the past, much bitterness ensued due to a lack of direction about acting administrative positions in denominational schools, because the correct procedure had not

been constantly adhered to on some occasions. One principal reports that "*the Secondary Schools' Boards... usually ask the Principal, off the record, for a recommendation as to who...would be the most suitable....*" Principals are faced with a challenge involving ethics and strength of character when the Board asks them for their unofficial recommendation for administrative positions in their schools.

An influential person explained that there are times when some persons on the Synodical Council are not au courant with correct procedures for promotion. Arms of the Presbyterian organization are responsible for the perpetuation of this adhocracy in procedure. To reiterate the words of the *Church Guide*, "democracy irresponsibly practised can lead to anarchy and confusion" (p. 48).

Conclusion

This research has demonstrated how micropolitics is manifested in the given context. It demonstrates how inefficiencies may occur in the promotion setting, thus providing a cautionary knowledge base to enable a change in systems that may not be functioning in the best interest of a community.

The notion of change itself cannot be divorced from micropolitics. Change is a political process. It occurs when there is a conflict of values, and we bear in mind that conflicts which may have been submerged, surface with change (Ball, 1987). In order to institute change, the inevitable micropolitical elements must be utilized in order to improve the ideas and values inherent in the desired change. Power, influence, and control have a role to play. The major point of focus in this discussion is that the motives for change and the means must be based on informed judgement, with educational goals in mind. Purpose must be apolitical.

If there is the will, there seems to be room for growth with regard to the Presbyterian Secondary Schools' Board of Education. Teachers are now in the era of performance management appraisals and have little tolerance for the informality and injustice perpetrated by micropolitical actors who shield their lack of knowledge and professionalism behind their armour of power and authority. Inappropriate influence and nefarious micropolitical activity can be curtailed when

procedures ensure effective decision making in an effort to realize the chosen mission and vision of all stakeholders.

One of the main areas necessitating change is the method of assessment. The majority of teachers agreed that the interview should not be the only form of assessment. Although principals are at liberty to attach a letter of recommendation to the candidate's application, this is not a requirement. Since the Board's recommendation is considered to be significant, it would be useful if the Presbyterian Secondary Schools' Board of Education was to design its own new assessment form, soliciting useful, specific information and evidence from all candidates' immediate superiors, including Heads of Departments and even from principals who have recently retired or resigned. This form should also be signed by the candidate. Portfolios are also useful as documentation of candidates' professional track record. Submission of these should be a requirement.

These suggestions also have relevance for the TSC and its form of assessment. Assessment must seem to be fair. At least candidates ought not to be subjected to the deliberate tone and air of power assumed by some members of the TSC, according to reports by some candidates. Commissioners must be conscientious in their efforts to execute the nation's ideals in education. Their Mark Sheet must also include descriptors for each category, so that the sum of each individual's general impression would not be the determinant of who becomes an administrator of a school.

Accountability must be seen as a necessary ingredient of democracy. All agents of authorized influence in the promotion process must be accountable. Marks, statements, and decisions must be rationalized. If micropolitical strategies dominate decision making, as the data have shown, accountability is surely an appropriate goal at this point. In order for the Presbyterian Secondary Schools' Board of Education to become more accountable, the culture of the Presbyterian Church must undergo metamorphosis. If it is to take its stewardship seriously, then it needs to overhaul its management attitudes and procedures.

Such an overhaul would underline the need for capability to be evident in the selection process. In this research context, interviewing as an assessment technique and recruitment or selection procedures have not been regarded as areas that

require specific technical or professional expertise. Instead, it is assumed that ex-principals, present principals, sometimes businessmen, and the average individual are equipped to conduct an interview for promotion. Perhaps there is need for an alternatively composed interviewing panel, which includes qualified interviewers who are removed from the promotion context—persons who have no close affiliation to the candidates, and to the Church or to the school in question. Persons experienced in education will advise interviewers as to discrete criteria, and will supply information to interviewers beforehand, will be present at the interview, but only as observers. The marking criteria and descriptors will be elaborated by the "qualified interviewers." Though this may be in collaboration with past and present principals, the intention is that the qualified interviewers are familiar with desirable educational practice and policies, as well as with the needs of the particular context for which they are selecting. The Presbyterian Secondary Schools' Board of Education should also avail itself of the services of "experts" in additional assessment techniques, which may include observation on the job or situational analysis, either orally or written.

A brave, bold, and visionary step for the Church would be to organize administrative training for teachers who may be interested in promotion in Presbyterian schools in the future. This can be executed with input from present and past principals, and trained personnel in educational administration. This suggestion is being made since many interviewers and teachers consider a "good fit" and "insiderness" to be important criteria. The Church and the Presbyterian Secondary Schools' Board of Education could then structure their own "grooming" for anyone who is interested.

Church Reports also need to be valid. It is being suggested here that all members of the Official Board and the Minister of the candidate's region sign the report, instead of only the Secretary of the Official Board and the Minister, as occurs at the present time. Failure to sign must be accompanied by an explanation. This is in an effort to eradicate the likelihood of influence tactics and of the abuse of the system by candidates who become "practising Presbyterians" overnight. The capability of Ministers to administer their Official Boards also comes into question. All members of the Official Board of the individual churches would then be held accountable and not be in a position to "pass the buck." With capability and competence as major goals at every level of the Church's involvement in education, accountability will not be elusive. Instead, it would be understood. Accountability facilitates transparency. Both may even be seen to be synonymous.

Communication needs to be open and reciprocal so that teachers and selectors understand each other's concerns. The first step in this transparency effort would be to make available to teachers the criteria for assessment and, secondly, to create opportunities for teachers to express their views and for misconceptions to be clarified. The human tendency to speculate, to question, and to arrive at alternative conclusions makes the diminution of micropolitical activity somewhat of a challenge. Teachers' and candidates' views and attitudes are sometimes shaped by misinformation, misconception, and mystique. They need to be formally apprised of procedures both at the Board level and at the level of the TSC. It would be useful for both entities to institute mechanisms whereby they cease to be as nebulous as they have been up to this time.

For too long, the relationship between decision makers and teachers has either been distant or non-existent. It would be no exaggeration to say that decision makers, that is the Board and the TSC, have had what appears to be insufficient respect for teachers as professionals when it comes to promotion. The lack of attention to detail, lack of feedback, and scant regard for professionalism in assessment are indications of the lack of esteem in which teachers are held by these authorities.

It is the social interaction of the parties involved that will determine the success or failure of innovation. What are required are attitudes that can accommodate all stages of the innovation. While there will be no escape from the politics of power, advocacy, and influence, we accept that all negotiation is political, but are comforted that the intentions would be healthy.

Education for democracy and empowerment cannot be achieved without attitudes that can accommodate it. Current attitudes to decision making, as at the level of promotion, are at the crossroads. Those accustomed to being in

positions of authority may want to re-evaluate their original positions on many issues. They may seek compromise, and in the process may realize a system that is forward-thinking, enhanced, and user-friendly.

If the Church is to continue to have a say in the administration of its schools, it cannot afford to bask in the past accomplishments of standards set when there was not much competition, but must harness its many resources to set new standards other than academic.

The Presbyterian Secondary Schools' Board of Education has shown some signs of self-evaluation in that some major changes have been made along the way with regard to the Church Report, the Mark Sheet, and the handling of formal protests. The TSC has made attempts to promote transparency in its own procedures through face-to-face communication with school boards. This is certainly the beginning of the way forward.

The literature has shown how the needs of the individual are so much a reality that organizations need to consider those needs in their planning and management. Man's tendency to manoeuvre towards exploitation and success, towards individual actualization as opposed to organizational good, and towards power acquisition inevitably leads him to engage in micropolitical behaviour as he attempts to accommodate to new needs. In the aim to find out how micropolitics is manifested in the promotion context, the data have shown many instances of micropolitical strategies within the promotion context. Instances of micropolitical activity as described in this research support the theory that political behaviour is propelled more by personal stake than by situational activity (Porter et al., 1981), and that individuals' activity within organizations is inherently political (Mangham, 1979). But the theory being proposed as a consequence of this study is that micropolitical activity is also a cultural phenomenon. Micropolitics is endemic to small societies, not just to organizations. The administration of Presbyterian secondary schools falls under the umbrella of a society—a social circle—that functions as the wider organization. Consequently, favours are usually sought, bargains are struck.

It is hoped that the findings of this research would, in the first instance, give others the courage to engage in research in areas that were before considered to be out-of-bounds. Secondly, this work could easily be complemented by related efforts by "insiders" who wish to initiate development by constructive critique.

References

Anderson, C. (1991). Cognitive politics of principals and teachers: Ideological control in an elementary school. In J. Blase (Ed.), *The politics of life in schools: Power, conflict, and cooperation* (pp. 120–130). London: Sage.

Arksey, H., & Knight, P. (1999). *Interviewing for social scientists.* London: Sage.

Bacharach, S. B. (1988). Notes on a political theory of educational organizations. In A. Westoby (Ed.), *Culture and power in educational organizations* (pp. 277–288). Milton Keynes, UK: Open University Press.

Backbier, E., Hoogstraten, J., & Terwogt-Kouwenhoven, K. M. (1997). Situational determinants of the acceptability of telling lies. *Journal of Applied Social Psychology, 27*(12), 1048–1062.

Ball, S. J. (1987). *The micropolitics of the school: Towards a theory of school organization.* New York: Methuen.

Baron, R. A. (1986). Self-presentation in job interviews: When there can be "too much of a good thing." *Journal of Applied Social Psychology, 16,* 16–28.

Blase, J. (Ed.). (1991). *The politics of life in schools: Power, conflict and cooperation.* London: Sage.

Cobb, A. T., Vest, M., & Hills, F. (1997). Who delivers justice? Source perceptions of procedural fairness. *Journal of Applied Social Psychology, 27*(12), 1021–1040.

Corbett, H. D. (1991). Community influence and school micropolitics: A case study. In J. Blase (Ed.), *The politics of life in school: Power, conflict and cooperation* (pp. 73–95). London: Sage.

Crant, J. M. (1996). Doing more harm than good: When is impression management likely to evoke a negative response? *Journal of Applied Social Psychology, 26*(16), 1454–1471.

Darling, J. (1967). On headmastering. In B. W. Hone & P. J. McKeown (Eds.), *The independent school: Papers presented to the Headmasters Conference.* Melbourne: Oxford University Press.

Dipboye, R. L. (1992). *Selection interviews: Process perspectives.* Cincinnati, OH: Southwestern.

Dippo, D (1994). Distance and relation reconsidered: Tensions in the ethnographic text. In A. Gitlin (Ed.), *Power and method* (pp. 203–216). London: Routledge.

Ferris, G. R., & Judge, T. A. (1991). Personnel/human resources management: A political influence perspective. *Journal of Management, 17*, 447–488.

Fine, M. (1994). Dis-stance and other stances: Negotiations of power inside feminist research. In A. Gitlin (Ed.), *Power and method* (pp. 13–35). London: Routledge.

Gilmore, D. C., & Ferris, G. R. (1989). The effects of applicant impression management tactics on interviewer judgments. *Journal of Management, 15*, 557–564.

Garfinkel, H. (1967). *Studies in ethnomethodology.* Englewood Cliffs, NJ: Prentice-Hall.

Goffman, E. (1959). *The presentation of self in everyday life.* Garden City, NY: Doubleday Anchor.

Goffman, E. (1971) *Relations in public.* New York: Basic Books.

Goffman, E. (1979). Footing. *Semiotica, 25*, 1–29.

Gronn, P. C. (1988). Talk as the work: The accomplishment of school administration. In A. Westoby (Ed.), *Culture and power in educational organizations* (pp. 289–314). Milton Keynes, UK: Open University Press.

Handy, C. B. (1976). *Understanding organizations.* Middlesex, England: Penguin.

Hargreaves, A. (1991). Contrived collegiality: The micropolitics of teacher collaboration. In J. Blase (Ed.), *The politics of life in schools: Power, conflict, and cooperation* (pp. 46–72). London: Sage.

Holtgraves, T., Eck, J., & Lasky, B. (1997). Face management, question wording, and social desirability. *Journal of Applied Social Psychology, 27*(18), 1650–1672.

Howard, J. L., & Ferris, G. R. (1996). The employment interview context: Social and situational influences on interviewer decisions. *Journal of Applied Social Psychology, 26*(2), 112–136.

Klein, J. (1963). *Working with groups: The social psychology of discussion and decision.* London: Hutchinson University Library.

Kleine-Kracht, P., & Wong, K. K. (1991). When district authority intrudes upon the local school. In J. Blase (Ed.), *The politics of life in schools: Power, conflict, and cooperation* (pp. 96–119). London: Sage.

Lewin, K. (1948). *Resolving social conflicts.* New York: Harper.

Lyons, G. (1981). *Teachers, careers and career perceptions.* Windsor, UK: NFER-Nelson.

Mangham, I. (1979). *The politics of organizational change.* Westport, CT: Greenwood Press.

Paterniti, D. A. (2000). The micropolitics of identity in adverse circumstance. *Journal of Contemporary Ethnography, 29*(1), 93–119.

Pettigrew, A. (1973). *The politics of organizational decision-making. London: Tavistock.*

Porter, L. W., Allen, R. W., & Angle, H. L. (1981). The politics of upward influence in organizations. *Research in Organizational Behavior, 3*, 109–149.

Rubin, H. J., & Rubin, I. S. (1995). *Qualitative interviewing: The art of hearing data*. London: Sage.

Tedeschi, J. T., & Reiss, M. (1981). Identities, the phenomenal self, and laboratory research. In J. T. Tedeschi (Ed.), *Impression management theory and social psychological research* (pp. 3–22). New York, NY: Academic.

Usher, R. (1997). Telling a story about research and research as story telling. In G. McKenzie, J. Powell, & R. Usher (Eds.), *Understanding social research. Perspectives on methodology and practice* (pp. 27–41). London: Falmer Press.

Wayne, S. J., & Kacmar, K. M. (1991). The effects of impression management on the performance appraisal process. *Organizational Behavior and Human Decision Processes, 48*, 70–88.

Wood, R. E., & Mitchell, T. R. (1981). Manager behavior in a social context: The impact on impression management on attributions and disciplinary actions. *Organizational Behaviour and Human Performance, 28*, 356–378.

Zaleznik, A. (1970, May-June). Power and politics in organizational life. *Harvard Business Review,* 47–60.

Part 4

Education and National Development

Education for Development:
The Case for a Skills-Based Approach

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Abstract. This article articulates possibilities for education to promote development. Development, conceptualized as capability expansion, can be facilitated once we use education to develop and expand the skills, academic and non-academic, not only within the expanded secondary education system but also on a wider scale, utilizing other training institutions nationwide.

Introduction

If education is to fuel development, we need to revisit and reconstruct the following:

- our current definitions of education and development
- the received wisdom (theory and research) on education for development
- educational practices and reform and the nexus with politics, economics, culture

This approach reverberates in Amanda Coffey's (2001, pp. 4–5) view that there have been three levels of transformations: school reform, sociocultural, and economic along with new theoretical perspectives.

Educational Policies: Past and Present

The development of educational policies in Trinidad and Tobago was done in four phases:

1. A colonial system, which established one or two secondary schools for the children of colonials, which were inaccessible to the wider population.

2. A post-Independence educational policy, which provided opportunities for all children to have equal opportunities to access secondary education, as a result of which many more schools were built and students were expected to write an assessment examination at age 11.

3. Further expansion of secondary education (1968–1983), which resulted in the introduction of junior, senior secondary, and composite schools. This allowed all students to be exposed to secondary education. Moreover, the curriculum provided for a wide range of pursuits: traditional academic fields and other fields such as creative arts and crafts, along with technical-vocational courses (welding, beauty culture, masonry.). The rationale behind this expansion was that the country needed a wide range of skilled workers in larger quantities as a result of the industrialization thrust.

4. The current policy of increasing access to tertiary education and the consequent subsidizing of tuition costs of-post-secondary programmes.

Theoretically, such policies reflect an understanding of education as an exercise that seeks to equip our citizens with a range of knowledge and skills in order that they may be better prepared for the world of work. Our practices across time, however, provide abundant evidence of our orientation to equate education with mainly academic achievements, as measured by the number of certificates that an individual has acquired. This approach is further reinforced by decision makers who:

- have consistently rewarded these students publicly;

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- have oriented parents and teachers to "push" and/or encourage their children to focus on academics even if their children prefer non-academic areas;

- have marginalized large numbers of students, resulting in an escalation of behaviour problems within the school system; and

- evaluate the system's performance in terms of size of investments, numbers of schools built, and places provided, while ignoring the negative effects of the returns to investment.

Defining Education, Development

Education, as previously defined, is always intended to provide everyone with a range of knowledge, skills, and positive attitudes. As a result, it is expected that individuals would become increasingly refined and would be able to fit into their society in socially acceptable ways. That fit is supposed to be a healthy fit: emotionally, morally, socially, physically, and intellectually. The present focus on academic or intellectual achievements fits into the received view that a knowledge emphasis is needed to fuel development. However, knowledge-driven development cannot be realized unless there is a consciousness that:

1. development is about capability expansion— academic and non-academic (Olson, 1997, p. 31);

2. capability expansion must straddle:
   - political, economic, cultural, social, religious, and educational arenas;
   - social, cultural, moral, and emotional capital;
   - age, gender, ethnic, and religious differences;
   - academic and non academic disciplines;

3. education has formal and informal dimensions, and it is necessary for different entities to network in the process—ministries, non-governmental organizations (NGOs), faith-based organizations (FBOs), community groups, schools, media, homes, and others.

Theory and Research

Some of the theories that are of relevance to any discussion of the education-development nexus are:

1. marxism, which posits that education is a conditioning device;

2. interpretivism, which argued that the meanings attached to education are important;

3. humanism, which emphasizes the importance of need fulfillment;

4. postmodernism, which highlights complexity as a major feature of education and other systems (Inglehart, 1997);

5. cultural capital theory, which states that the most benefits will accrue to those with the most cultural resources, who will benefit most from education (Bourdieu & Passeron, 1977);

6. social capital theory, which postulates the significance of trust and healthy interpersonal relations (Stiglitz, 2003);

7. Solow models, in which education is seen as central to economic growth, and measurement of returns to education is in both monetary and non-monetary terms (McMahon, 1999, p. 3);

8. endogenous development models, which posit the significance of estimating levels of economic growth, population and health, human rights, poverty, environment, crime, labour force participation, and student enrolment (McMahon, 1999, p. 11);

9. feminism, which advances the need to foreground gender issues in education.

These perspectives have provided us with new ways of seeing educational outcomes, pedagogy, equity, and social justice (Coffey, 2001, p. 5).

Contemporary Educational Practices

Schooling in Trinidad and Tobago, from the immediate post-Independence period to the present, has been characterized by:

- a one-sided emphasis on examinations, which has precipitated competitiveness and a prioritizing of academics;

- continued academic bias, despite expansion into junior and senior secondary, senior comprehensive, and composite schools, which were really designed to provide the society with more technically skilled individuals;

- an increase in the intake at tertiary level (The University of the West Indies (UWI)) and the proliferation of several additional tertiary-level institutions, all of which show little respect for sports and creative arts;

- a continued inability to deal with the behavioural problems of the non-academically inclined, despite several macro-level initiatives: principal and teacher retraining; school-level interventions to reduce violence; and more social workers, and guidance and security officers attached to schools;

- an increase in student disenchantment with schools coupled with an increasing failure rate at the Caribbean Examinations Council (CXC) examinations;

- a low labour market absorption capacity for secondary and tertiary-level graduates when they seek entry to the workplace;

- the unwillingness of graduates at all levels to create their own jobs;

- the automatic movement of students from primary to secondary, and from junior secondary to senior comprehensive, despite knowledge of the fact that quality always suffers when quantity is emphasized;

- the abolition of corporal punishment in school and an increased level of school violence.

A number of educational reform initiatives have been undertaken:

- The introduction of school boards
- An expanded role for social workers and guidance officers
- The retraining of principals
- The introduction of master teachers
- School violence intervention strategies
- School feeding programmes
- Curriculum expansion
- Textbook rental programmes
- Curriculum expansion
- Curriculum changes
- Infrastructural improvements and the introduction of computers

If we are to begin educating for development, we need to realize that:

1. Development from above, or macro-level development ideas, tend to stretch the social fabric, making it more vulnerable to cracks, chinks, and widening gaps between individuals and groups and this impacts on the education process.

2. Macro-level development ideas (political, economic, social, etc.) must be simultaneously accompanied by micro-level initiatives targeting individuals and communities.

3. Learning or educating has positive and negative aspects, which occur both within and outside of formal institutions.

4. "True" education will only occur when the totality of positive messages (communicated in various forms) consistently overwhelms the totality of negative messages.

This type of understanding of education, if reflected in our policies, programmes, and practices would lead to the emergence of a set of values that sees everyone as educable, whether in academic and/or non-academic ways. Moreover, it would bring us to the point where employers and educators could reduce this disconnect, which has impacted negatively on levels of motivations in our schools (Olson, 1997, p. 2).

In Trinidad and Tobago, the education system (structurally) can be considered a "sleeping giant," given the provisions for technical-vocational, creative arts, business, science, literary, modern studies, and physical and religious education. Operationally, it is a one-sided system given that practices and rewards favour only the academically inclined, and ignore the fact that the vast majority of the student population are non-academically inclined. In addition, academic achievements, like other types of achievement, would also follow a "normal" curve, which means that in any population there is a limit (in terms of

percentage) to the number of students who would succeed academically.

There exists a wide range of skills/talents in the school-age population. More specifically, some are oriented towards creative arts, others towards sports, science, literary fields, and modern studies. Presently, many of our young people are "hooked" on technological gadgets and various forms of popular culture. Since schools have not been "bringing out" scientific, literary, and business skills on a large scale given the focus of knowledge, it should be noted that we can bring forth these skills/inclinations by starting with their interest in technological gadgets and popular culture. This can be further enhanced by getting them involved in community projects.

The focus, then, must be on skills-building. Once this is properly implemented, the non-academically inclined would also be able to chart their career path. For example, National Certificates (Forms 3 and 4) are to be awarded for all these aforementioned disciplines. Provision should now be made nationwide for career development in these fields, by building or expanding the Youth Training and Employment Partnership Programme (YTEPP), Servol, the National Skills Development Programme (NSDP), and the Multi-Sector Skills Training Programme (MuST), to which individuals should be admitted without any academic prerequisites because many do not have them. Individuals who have been thus exposed should be subsequently placed in a National Apprenticeship Scheme. Through such a scheme, they can receive further training from participating companies for a stipulated period. Good individual performances at various stages of their training should be highlighted in the media and such performances should be rewarded with trophies, medals, and/or financial incentives.

This type of large-scale initiative would produce an educational system that has two developmental paths—academic and non-academic—both of which are providing the student population with functional skills and career paths.

Educational systems, like any other, can be evaluated by using an Input-Throughput-Output-Feedback framework. This article proposes an expanded definition of education—one that would be more responsive to change, one that promotes skills and capabilities; a view that is central to Amartya Sen's (1999) view of development.

Such skill acquisition would allow for faster absorption into projects and better quality outputs in areas such as industry, business, technical fields, communications, and others. It is imperative, therefore, if we are going to make our educational practices more relevant to our nation's development, that we realize the importance of the following:

1. A definition of development, along with an articulation of development needs, is needed. These should **not** be the same as more advanced economies such as the United States, England, and Canada, since their development needs are different to those of the Caribbean.

2. The schooling to which our students are currently being exposed pursues and achieves narrow objectives, which become outmoded/dysfunctional as societies change. Education, however, allows individuals to develop a range of skills (beyond academic), which not only assists with personal growth (spiritual, social, moral, etc.) but also helps to develop cultural, emotional, intellectual, and technological capital.

3. The production of cultural, social, and emotional capital renders citizens more functional to any society than the acquisition of only intellectual capital, which is the current thrust globally. This is a note of caution for those who believe that knowledge development and management would singularly promote development.

4. Citizens must be provided with opportunities to enhance their skills if they are to fit in and function in a changing world.

5. The view that "thinkers" can only emerge in academic fields needs to be debunked. It should be pointed out that thinkers can emerge in any field, and have indeed emerged in art, music, drama, small business, communications, sports, agriculture, history, and other areas. It is only because of previous and prevailing values that we continue to associate the emergence of thinkers with academia only.

The need for a skills-based economy is driven by the realization that:

- academic and non-academic skills development should be aggressively pursued at school and community levels given the low job absorption capacity of our economy;
- the high levels of industrialization require a skill base that is currently in short supply in Trinidad and Tobago; and
- greater emphasis on creative arts, agriculture, and sports would lead to more prosocial behaviour across all communities.

This article advances the view that real education (not schooling) would provide citizens with knowledge, attitudes, and skills within and outside schools over a lifetime. Moreover, the acquisition of knowledge and attitudes are subsumed in the acquisition of skills, and are therefore learnt faster when we promote skills development rather than knowledge acquisition. This position meshes well with the view of development as capability expansion. Indeed, such an approach would allow for an expansion of people's capacities once their skills are upgraded and/or expanded. Individuals would subsequently realize that their expanded and/or newly acquired skills would be a boost to their self-esteem, and would further enhance their ability to contribute to their organizations, communities, and, by extension, the nation.

Generally, the range of responses to these problems over the years, though well-intentioned, has not really improved the school system. The following questions are therefore relevant:

1. How do we shift from schooling to education in practical terms?
2. Are there limits to the improvement of the quality of education for our students?
3. If there aren't limits to the improvement of the quality of education for our students, what kind of "futures" would education serve to provide for the development needs at all levels of the society?

In light of the above, the following are several specific suggestions for operationalizing the ideas discussed in Trinidad and Tobago:

1. We can only begin to educate if we accept the view that education occurs every day of our lives, both within and outside the school environment.

2. We must begin to reward more substantially and highlight the work of students in the technical-vocational field, creative arts, sports, and agriculture in the same way that we reward academic achievements.

3. Outstanding students in these areas can be publicly rewarded with medals, trophies or shields, cheques, and media coverage.

4. The focus of the National Examinations Council (NEC) should be adjusted to reflect a combination of academic **and** technical-vocational subjects, since many secondary school students are not academically inclined. These students are more likely to perform better if allowed to pursue, for example, English Language (Basic or General), two technical subjects, Technical Drawing, Art **and** Social Studies/Mathematics **or** both Social Studies and Mathematics, depending on their ability. NEC or CXC certificates should be awarded even if only one subject is passed.

5. Technical-vocational students should embark on projects to construct tools (forks, cutlasses, shovels, furniture, metal chairs, etc.) that should be put up for sale to residents within their community.

6. Creative Arts, Physical Education, Agricultural Education, and even Cultural and Environmental Studies should be (re)introduced as examinable subjects at the primary and secondary levels, and students should be suitably rewarded for their performances in these areas. In addition, inter-school competitions should be organized in these areas.

7. Manufacturing, construction, and petroleum companies nationwide should be encouraged to hire, for approximately two months (during the summer vacation), selected technical-vocational students, whose performance on the job could be used as part of their final assessment. This evaluation could serve to motivate students as well as teachers and

render the teaching more relevant to the current and changing workplace.

8. Students should be encouraged to utilize drama, art and craft, poetry, and music to express how they feel and make suggestions to address social problems. These presentations could be staged or displayed in appropriate settings and evaluated or assessed. Students' termly evaluations, therefore, do not necessarily have to be only in a written form.

9. Cultural and Environmental Studies, along with Psychotherapy, Counselling, and Conflict Management should also be introduced at the level of teacher training.

Any education system that is strongly focused on examinations, the presentation of papers and reports, and the competitive accumulation of knowledge would inevitably produce individuals who are more oriented to the articulation of causes and effects, that is, well-spoken academics. While this may be necessary, it is insufficient. It is also important to incorporate a "practical" or applied dimension in all subject areas, at all levels of our education system. The following are some suggestions:

1. A project approach at the primary level based on practical problems, for example, mathematics students may be given assignments to determine how many tiles are needed for tiling a defined space, or how many metres of curtain are needed in their respective homes.

2. At the secondary level, social studies teachers and students could organize and implement a complete election campaign within the confines of their particular school—from a list of registered voters (students) through the actual voting process complete with speeches, placards, manifestoes, etc.).

3. At the university level, using fictitious names, management and international relations students should be assessed on the basis of an attachment to a company/embassy.

4. The organization of large-scale nation-wide competitions in sports, creative arts, agriculture, and other technical areas.

At all levels of our education system, the incorporation of such projects should be included in the various syllabi and form part of students' assessment. In the long run, this should serve to reverse the management problems across all sectors of the economy as our education system begins to foreground skills development and problem solving.

Indeed, this "grounded" approach to education provides channels for mobilizing the multiple intelligences of our people in order to develop various literacies—scientific, business, cultural, technological, communicative, and artistic.

References

Bourdieu, P., & Passeron, J. C. (1977). *Reproduction in education, culture and society*. London: Sage.

Coffey, A. (2001). *Education and social change*. Buckingham, UK : Open University Press.

Inglehart, R. 1997. *Modernization and postmodernization: Cultural, economic and political change in 43 societies*. Princeton, NJ: Princeton University Press.

McMahon, W. W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press

Olson, L. (1997). *The school-to-work revolution*. Reading, MA: Addison-Wesley.

Sen, A. (1999). *Development as freedom*. New York: Random House.

Stiglitz, J. (2003). *Globalization and its discontents*. New York: Norton.

Education in Crisis: Re-Visiting the "Carnival Mentality"

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Abstract. This paper draws on an ethnographic case study of learning/teaching practices in Trinidad Carnival mas'camps. Over the Carnival 2005 season, selected members of the mas' making community shared their perspectives on learning/teaching practices at work in the Carnival mas' camp. I constructed the learning narratives in this article from the field notes, photographs, and biographical interviews. I used these learning narratives to make meaning of the various socio-historical-cultural theories of learning that situate learners in spaces that are sometimes explained using constructs like non-school and non-formal. These learning narratives demonstrate the practices that inform learning, the kind of person the learner becomes, and his/her philosophy of lifelong learning and continuing education. Further, they provide evidence of the value of these spaces, and the kinds of imagined possibilities that exist for Caribbean policy makers whose discourse suggest that they recognize the importance of encouraging non-formal, informal, and indigenous learning systems.

To establish his own identity
Caliban after three centuries must
Himself pioneer into regions Caesar never knew.
(James, 1993)

Introduction

Prior to, and since, the 1962 political independence of the Republic of Trinidad and Tobago, there have been numerous international, regional, national, reform policies and educational action plans designed to facilitate: the right to education, education for all, and quality education. In spite of increased access, changes in the quality and quantity of the infrastructure, increased levels of literacy, changes in modes of assessment, and attempts at curriculum reform, this country's educational system, like so many others regionally, remains in a state of "post-colonial limbo" (London, 2002). The educational system continues to struggle to establish its own identity while dealing with the many social, economic, and political challenges it faces.

Various stakeholders continue to express concerns about the "crisis" in education and the inability of the system to produce the much-needed human capital and knowledge-based economy. Wiltshire and Steward (1991), in their discussion on educational research in the Caribbean, claim that large numbers of students leave the formal educational system without the basic skills required for entry into the workplace.

In addition, there is the increasing culture of violence in the schools—a microcosm of the society. The Ministers of Education of the Organization of American States (OAS), at their Fourth Meeting in Scarborough, Tobago adopted a resolution that points to their acceptance of the issue of violence as a major challenge in the region. It stated:

> We are cognizant of the challenges and responsibilities our educators face due to increasing individual and group violence in our societies. Schools and institutions of higher education must be safe places that promote emotional, mental, and physical health for both students and staff. (OAS, 2005, Resolution 13, p. 2)

Research has been proposed as a means of addressing and finding solutions to the problems in the education sector. The proposed Inter-American Program on Education for Democratic Values and Practices attached to the above resolution pointed to the value of research (Finkel, 2000, as cited in OAS, 2005, p. 17; Schugurensky, 2002) done on the non-formal learning sectors and the important insights they can provide for policy makers in the region. According to Wiltshire and Steward (1991), the lack of funding and the numerous constraints that Caribbean scholars face have not prevented them from promoting "research as a necessary activity for the

acquisition of knowledge that can be utilized in confronting challenges implicit in national and regional development" (pp. 203–204). There is still, however, a need for "an indigenous capability in terms of trained researchers" (p. 203).

Meanwhile, Caribbean member state Trinidad and Tobago, in attempting to deal with the problems, recognizes the importance of the non-school sectors. Trinidad and Tobago adopted remedial programmes like the Youth Training and Employment Partnership Programme (YTEPP), and more recently proposed the National Open School System of Trinidad and Tobago (NOSSTT). The Ministry of Education claims that NOSSTT has the potential of "de-institutionalising learning by distributing it more equitably and taking learning to the learner—at home, in communities and in the workplace" (Trinidad and Tobago. Ministry of Education [MOE], 2006a, p. 2). The Ministry's "Conceptual Framework for the National Open School System of Trinidad and Tobago" indicates an interest in "non-formal" learning, lifelong learning, and continuing education. My concern, however, is that non-formal refers to the level of formality in the system and context, and the kinds of interactions, but that the goals of academic achievement and formal certification remain the same.

In spite of the growing interest in learning in non-school contexts, we in the Caribbean have paid little attention to "free spaces" (Evans & Boyte, 1992; Fine, Weis, Craig, & Roberts, 2000) like our Carnival mas' camps. I believe that there are levels of formality and informality along the continuum in both institutionalized and non-institutionalized learning spaces. Therefore, in our search for ways to make it happen for the many that we are trying to "include" in our goal of "Caribbean Education for All" (MOE, 2006b) we need to look to "free spaces" like our Carnival mas' camps. I am suggesting that we, and I am including Caribbean educational researchers, need like Caliban to journey to our own "free spaces" in an effort to begin planning our escape from the post-colonial limbo. Caribbean researchers like George (1986, 1995, 2001) are among the many that are making the links between culture and education, and making a case for increased exploration of indigenous learning systems. It is against this background and my interest in including the arts as an invaluable source of learning, that I focused on the Carnival mas' camp to explore the members' perceptions of their learning/teaching practices.

This paper re-presents a snapshot of a wire bender, Kendall De Peaza,[1] one of the participants in my dissertation study, (Fournillier, 2005) whose learning narratives demonstrate how his wire skills in Carnival mas' art allows him to be-come[2] a lifelong learner/teacher in the Carnival mas' art. Although the focus is on the individual as an example, I use the narratives of other participants in the study to create the ethnographic context. I re-present the learning narratives that I created from my description, analysis, and interpretation (Wolcott, 1994) of interview data, field notes, participant observations, and photographs. I intersperse these narratives with a discussion of the theoretical and conceptual discourses that informed how I made meaning of the experiences. In so doing, I make claims for possible connections between mas' making and teaching/learning practices.

One caveat needs to be acknowledged. I am not suggesting that the Carnival mas' camp become a complement or supplement to the institutionalized educational spaces. I use it as an example of a "free space" that is integral to the being of so many Caribbean people whether or not they actually participate as costumed mas' players or mas' makers.

Research Context: Trinidad and Tobago Carnival

One cannot be a Trinidadian and escape the annual pre-Lenten Carnival festival—a symbol of creativity, a trinity of steelband music, calypso, and mas'. Over the years, more so since emancipation (1498), the festival has evolved. The festival has become many things to many persons and is certainly much more than the more widely published "jam and wine."[3] Earl Lovelace (1998), in his novel *The Dragon Can't Dance*, describes the young men who during Carnival "troop off street corners, desert their battle field and territory, and turn up the hill to the steelband tent to assemble before steel drums" (p. 12). Lovelace compares the steelband tent to "a cathedral" and the players to "young men priests" who "will draw from back pockets those rubber-tipped sticks which they carried around all year, as the one link

to the music that is their life, their soul, and touch them to the cracked faces of the drums" (p. 12). For some critics, this might be a romanticizing of the festival, but for me, it represents the value of this festival for the many young men and women in our society whom we as educators struggle to engage and motivate to achieve. In one of my early interviews, Collin, a mas' maker, expressed the depth of feeling he has for his mas' making activity. He says:

The blessing is creating the costume and seeing the excitement and satisfaction on their faces. You see....pores raise and tears start to run down and you take a bottle of water and wash your face because you kind of feeling shame. But still sometimes the tears just run down. (Interview at the mas' camp, 19 March, 2005)

Such is the depth of feeling for Carnival, the festival with which I grew up and which I was now viewing as a "free space."

Mason (1998), in his ethnographic study of the festival, said that, "in other countries carnival is a diversion from the troubles of life; in Trinidad it is as if life is a diversion from carnival" (p. 16). Carnival is also a time when the country's economy gets an added boost. Girvan (2002) claimed that Trinidad Carnival attracted as many as 40,000 tourists and generated close to US$15 million annually. Trinidad Carnival "has spawned some 50 overseas Carnivals in other parts of the Caribbean and in the metropolitan centers where the Caribbean Diaspora has a presence" (Girvan, 2002, para. 6). In so doing, Trinidad Carnival has become the largest transnational celebration of popular culture (Ho & Nurse, 2005). Manning (1990) supported this view and observed, "While Third World countries are well known as importers of metropolitan popular culture, the reverse process—the export of cultural products and performances from the Third World—has evoked less discussion" (p. 20). Scholars like Ho and Nurse are seeing the potential not only for economic gain but also for showcasing the creativity and artistry of the citizens of Trinidad and Tobago. These are only a few of the many Caribbean and international scholars who acclaimed the value of the festival and assigned to it qualities too numerous for this paper.

Theoretical Contexts:
Learning and Non-School

The desire to explore the possibilities of understanding learning that takes place in non-school contexts which cater for mostly school-age, but also out-of-school, populations has led to an increase in research on learning in everyday contexts. An entire special edition of *Review of Research in Education* (2006) was devoted to "Rethinking Learning," and opened spaces for discussion on the various theoretical perspectives, methodologies, and conceptual framing of what counts as learning and what learning counts. In this section of the paper, I explore the perspective I adopted and adapted in my study of teaching/learning practices and my interpretation and understanding of the various spaces and levels of formality.

Learning:
Socio-Cultural-Historical Approaches

The diversity of perspectives and ways of conceptualizing learning/teaching and learner/teacher provide educational researchers with a rich source of explanations from which to choose. Green and Luke (2006) remind us that "no one research tradition, theoretical perspective, or methodological approach can address the full range of complexity entailed in seeking to understand what counts as learning and its counterpart what learning counts" (p. xii). How then did I choose and justify the perspective with which I aligned my thinking about what counts as learning and what learning counts?

My lifespan and educational experiences have allowed me to experience first-hand the shift within learning theories from behaviourism (Pavlov, 1960; Skinner, 1974) to cognitivism (Anderson, 2005; Piaget, 1959; Vygotsky, 1978) and sociocultural theories of learning (Brown, Collins, & Duguid, 1989; Lave, 1996, Lave & Wenger, 1991). Kirshner and Whitson (1997) claimed that the behaviourist and cognitivist paradigms, "limited the opportunity to explore learning and knowledge as processes that occur in a local, subjective, and socially constructed world" (p. vii). As a result, the sociocultural school of thought takes as its central problem, "the processes

whereby cultures reproduce themselves across generational boundaries" (Kirshner & Whitson, p. 5). Sociocultural theories of learning therefore seemed a most appropriate choice, given my interest in the practices within a national cultural activity that receives mixed reviews. "How can we, the people of Trinidad and Tobago, ensure that the Carnival art form, and the learning/teaching practices associated with it continue across generational boundaries"?

Sociocultural theorists conceptualize learning as distributed (Cole & Engestrom, 1993), interactive (Chang-Wells & Wells, 1993), contextual (John-Steiner & Mahn, 1996), and the result of learners' participation in a community of practice (Lave & Wenger, 1991; Rogoff & Lave, 1984; Wertsch, 1991). These theorists built on the work of Bakhtin (1981) and Russian psychologist Lev Vygotsky (1978), who developed the concept of the zone of proximal development (ZPD). Vygotsky defined ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). I judged that these multiple ways of viewing learning would allow for various ways of thinking through the data and exploring the members' perceptions of the practices involved in learning to make mas'.

Viewing learning as distributed, contextual, interactive, and the result of participation allowed for an emergent research design. I was not limited to looking only at how the members of the community were interacting with each other. I could also look at the contexts that framed the activities, the various opportunities for learning, and the result of the kinds of participation between and among members of the community. Additionally, these various ways of viewing learning allowed for the postponement of final judgement on what might be significant to explore in-depth. Spindler & Hammond (2000) argued that this postponement is a reasonable criterion for good ethnography of education. They remarked that "hypotheses emerge in situ as the study continues in the setting selected for observation. Judgment on what may be significant to study in-depth is deferred until the orienting phase of the field study has been completed" (p. 73). I was

therefore able to be flexible when faced with dilemmas in the field.

Another assumption of sociocultural approaches to learning is that knowledge is co-constructed and the result of collaboration and transformation. John-Steiner and Mahn (1996), in their review of the theories, commented that "a focus of sociocultural research is the study of the way that the co-construction of knowledge is internalized, appropriated, transmitted, or transformed in formal and informal learning settings" (p. 200). This theoretical frame seemed appropriate for my study of individuals and their activities within a setting that could be classified as informal.

Of importance to my study was Wenger's (1990) ethnographic study of a claim processing centre in a large insurance company that built on and opened up the discourse on learning as socially situated and the result of co-participation. Wenger argued that:

> Knowledge does not exist by itself in the form of information, but is part of the practice of specific sociocultural communities, called here "communities of practice." Learning then is a matter of gaining a form of membership in these communities: this is achieved by participation, which is called here "legitimate peripheral participation." Learning thus is tantamount to becoming a certain kind of person. (p. xv)

Thus, although mas' making practices was the unit of analysis, I was free to look at the personality development of the individual in practice (see Appendix A).

Who are the Mas' Makers?

In my review of the literature on Trinidad Carnival, I noted that the spotlight rarely fell on the range of persons with whom I spent long days and sleepless nights, to ensure that we "make it happen." For these men and women, "lunch time is when you get time for lunch." The focus of this paper is on one member of the community, but it is important to acknowledge the diversity in the community. One member of my network of participants, who calls herself Ms. Mommy,

prepared me for the diversity I would encounter in the mas' camps. She wrote:

I met loads of other artists - experienced and inexperienced, foreign and local. The variety of people that Minshall's work pulled together involved, students, photographers, painters, sculptors, teachers, PhD students, vacationers, yachties, inventors, high school drop-outs, wire benders, welders, carpenters, joiners, masons, tailors, seamstresses, gay, straight, lesbian, bisexual, single, married, divorced, craftsmen and women of every ilk from age 13 to 70, from Venezuela to France and beyond. (Ms. Mommy, personal communication, 22 March 2004)

Patrick Roberts, a well known designer/artist/teacher confirmed this statement as he too remarked on the variety of persons working in the mas' camps. He said:

And in the mas' making if you go into any mas' camp, you will see people working and you wouldn't even know who they are. When you start talking to them you find out this one has a BSc. or MSc. in engineering and here he is sticking on stuff...and people bring all kinds of skills. (Interview, March, 2005)

Although I had been for many years a "spect-actor," one who participates by looking on (Boal, 1985), and a mas' player in the festival, I soon became a volunteer worker working with and learning the art of mas' making, and collecting data to answer the following question: How does learning to make mas' work among members of the community of practice[4] in Trinidad Carnival? My first major discovery was that there was no one place that could be called a mas' camp.

Trinidad Carnival Mas' Camps

A mas' camp could be a school, a house that was rented, room(s) in someone's house, a galvanized covered shed that seemed ready to collapse on the costumes, an abandoned gas station, and an old airplane hangar. Any space

Figure 1. The Art Factory: McFarlane's Carnival mas' camp 2005.[5]

could qualify as long as there was room to "make it happen." The physical space did not matter.

In spite of the lack of space or its seeming inadequacy to the outside world, it was a welcoming place for anyone who wanted to work on the costumes. However, there was some method to the madness and I soon discovered that there was a management/organizational structure that facilitated the production of the costumes. The structure might not be the same for every mas' camp but there was one in every mas' camp (see Figure 2).

Patrick described the mas' camp as "the perfect school where no voice is less than or more than anyone else." When I asked him to explain, Patrick replied:

In the normal school the teacher is always perceived as the one passing on the information, and the student is perceived as the one receiving the information. And the teacher takes up the exalted place in front the class. In a mas' camp we don't work like that. We work around a table, we work on the bench, we work on a step. We work where you feel comfortable to work. You might have one person driving the team but his voice is not the only voice. The person doing the production in my band is one of my students and he tells me what he wants. I am his boss but he runs the thing. (Interview, March 2004)

My own experience of being a volunteer whose voice could also be heard when we were creating a costume allowed me to affirm that there was some element of truth in this statement. Some volunteers, or even workers, did not always feel that they had the right to critique or make comments and they were in fact, "just doing what they were told to do."

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PEOPLE IN THE MAS' CAMPS CARNIVAL 2005

  ┌─────────────────────────────┐      ┌──────────────────────────────────┐
  │ Band leader/Designer        │      │ Office Manager and Assistant to  │
  │ Researcher and associates   │      │ the Band Leader                  │
  │                             │      │ Office staff and registration    │
  │                             │      │ personnel                        │
  │                             │      │ Distributors of Costumes         │
  │                             │      │ Security Official for Carnival   │
  │                             │      │ days                             │
  └─────────────────────────────┘      └──────────────────────────────────┘

  ┌─────────────────────────────┐      ┌──────────────────────────────────┐
  │ Designer/Production         │      │ Assistant to the Production      │
  │ Manager                     │      │ Manager                          │
  │                             │      │ Ground Floor Supervisor          │
  └─────────────────────────────┘      └──────────────────────────────────┘

  ┌──────────────────────────────────────────────────────────────────────┐
  │  • WORKERS and VOLUNTEERS                                             │
  │  • Designers/producers (king and queen costumes)                     │
  │  • Wire benders                                                      │
  │  • Woodworkers                                                       │
  │  • Metal workers                                                     │
  │  • Fiber glass workers                                              │
  │  • Decorators                                                       │
  │  • Seamstresses                                                     │
  └──────────────────────────────────────────────────────────────────────┘
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Figure 2. McFarlane's mas' camp 2005.

It is to this local setting that allowed for mas' camps in various spaces, and to this diverse group of mas' makers and learners (men and women) that I went to gain my cultural experience of how learning to make mas' takes place.

Point of Entry

I look back to November 2004 when I was bold enough to re-visit one of my former undergraduate lecturers and request a meeting with her. I remember sitting at her bedside and seeing her pull out her worn but functional telephone book. She immediately began providing me with names, addresses, telephone numbers, and contacts that she thought would be good to "talk to." I trusted her because she was one of the best-known artists and the Director of the Carnival Institute. The blue notebook in which I hurriedly made the notes walked with me constantly. It is to this book I would turn one year later when I made my official entry into the field. I nervously dialed the number hoping that De Peaza would remember me from one year ago when he had agreed to participate in my study. He vaguely remembered but agreed to meet with me at his home, which was also his mas' camp on many occasions.

I pushed the gate to the house and the dogs' barking alerted everyone that someone was

entering the premises. The parts of costumes from previous years mounted on the wrought iron gate told me that I was at the correct house. De Peaza apologized for the condition of the house and mas' camp that were being torn apart to be put together for Christmas. Morn, his wife, welcomed me to their castle that they built on their own. We spent the next three hours catching up on the Carnival stories. My audio-taped biographical interviews took place on the second visit and when I returned for a de-briefing of the data. I remember only too well how De Peaza unashamedly wiped a tear from his eye [and apologized for it] as I read the narrative I had created using the transcribed interview data, our informal chats, my observation notes, and the photographs. They assured me that the narrative reflected their feelings and attitudes. "That is me self," De Peaza said. I assumed some measure of trustworthiness and "validity" in the *Figure 3*. De Peaza and Morn's home is a kind of mas' camp.

data. The feeling of relief and the satisfaction they expressed inspired me to use their narratives in this paper.

De Peaza the Fearless Boy: Learning Through Play and Practice

As a young boy growing up next to a steelband yard and mas' camp, De Peaza witnessed his uncle and father bending wire to make the big Ferris wheel for Starlift Steel Orchestra's Carnival costumes. He began playing with the wire and trying to make things with it. He returns to his past to describe how he came to wire bending:

As a little boy I would come home, I have a little wire to make a little bicycle and a little man out of wire. My grandmother used to say, "What you doing there only with a set of wire all over the place?" So I with my uncle pliers, my father pliers all who have tools I used to take the pliers and always bending something. (Interview 11 December, 2004)

Thus his apprenticeship[6] began. De Peaza learned from observing, practising, and modelling. This "fearless boy," as De Peaza describes himself, would soon get his first opportunity to demonstrate the skills he gained from *playing with the wire*. De Peaza reflects:

I attended the Belmont Intermediate and there was a teacher he used to dance, what's his name [Cyril St. Louis, I reminded him[7]]. Yes, in his class, they wanted some flowers made for the dance. So I, children as usual, I never did it before and I sit down in the desk. I telling the children "I could make that." And one of the students, I can't remember which one, said: "Sir De Peaza say he could make that." So Cyril said, "I want to see you after." He called me and he said, "DePeaza you could make that"? I said, "I never made that." He said, "You said you could make it. You feel you could make it? I going to supply you with some wire and some cloth." Well it had me confused because I never did it before. But I brave. It was a red velvet, I remember it good. We did the roses red and white. And we bent the petals a little rough because I am learning. In those days you used to tie wire on wire and the frame was there and after you cover the frame you wasn't seeing the roughness of the wire. And from there I got into myself and I tell myself, "Well look I think I could go further into this and from there I started to do work for a lot of people would come and say" DePaeza I want this hat done, this buffalo done." That was my start. (Interview, 11 December 2004)

De Peaza: The Lifelong Learner/Teacher

De Peaza would soon move on to working with established mas 'camps like Stephen Lee Heung, Callaloo Company and children's mas' camps. He continued to learn from and with the designers as he developed his wire-bending skills and became a

teacher in the mas' camp and a tutor at the university. De Peaza describes his experience of learning from a designer:

He has taught me the concept that he being the designer not only teaches me but learns from me. And what he told me is that De Peaza I get into your head and you have to learn to get into my head. And in the process of going with Minshall I get to understand Minshall just as Minshall get to understand me. On the phone he would say, "De Peaza I want so and so and just give me a measurement and an idea of what he wants. He would say you make a sample come I doing a drawing. And we will work. And sometimes when I reach in the camp he would say just add here take off here.... (Interview, 11 December, 2004)

De Peaza continues to explain to me the concept of getting into the other person's head. He says:

The process is something that... it is a process that people supposed to do with each other. Getting into one's head is getting to understand them. Not only to understand the happiness or the goodness in them but to understand how it is when they are in failure. To understand how they think in the way that if something is wrong, what direction they would head. It is something that is very hard to explain. But it is a form of psychology that we all...you don't have to go into a class to learn psychology we born with the concept of psychology and it happens that we suppose to sit down and understand. (Interview, 11 December, 2004)

It is this attitude to teaching and learning, his willingness to adopt the attitude of each one teach one, and that no one is illiterate that allows De Peaza to successfully perform his role as teacher in the formal school setting and the mas' camp. De Peaza describes how he teaches in the mas' camp and in the classroom:

It is a learning process. So what happens is that they start by... For example I have the forms to work and they don't have the technique of making the forms. So I say well 6x9 and cut square 6x9. And is a simple thing every body could do. And eventually while working I will give them a hands-on. Like see if you could bend this thing in a C for me in a semi circle for me. And they do it. And I

say ok you give me six semicircles and you give me five flats and you give me () long ones...Ready to put together. Tighten the wire. I may have to come back and adjust. But what is happening in that process is a learning process. So I am not only being assisted but I am also teaching and they are learning. So we tend to help each other. (Interview, 11 December, 2004)

My Learning Narrative

I now turn to the kinds of meaning I began making of the narrative and how I was able to combine De Peaza's experience with my conceptual frames. In this paper, I chose to focus on one wire-bender, De Peaza. The learning narratives that I created from the in-depth formal interviews supported growing theoretical accounts of everyday cognition and learning as practice, situated, distributed, and co-participatory (Lave 1988; Lave & Wenger, 1991; Rogoff & Lave, 1984; Wenger, 1998; Wertsch, 1991). Further, his narratives affirmed a blurring of the boundaries between formal, informal, and non-formal contexts within and without the institutionalized educational systems.

De Peaza began learning his wire-bending skill in his backyard, which soon became his workshop. He experimented with wire forms and began making costumes for his teacher/dancer who was in need of someone to produce the costumes. The teacher plays an important role in the learning process because he dared to give De Peaza the chance to experiment with the materials. De Peaza, via his teacher who was not himself a wire bender, was given permission to assume the role of expert. This situation allowed De Peaza to realize what he knew and to claim that he could do it and wanted to go further with it. Because De Peaza was in a "hands-on" situation, his ability to learn was closely related to his ability to perform the task. There was no need for an abstract exam. He passed his first exam when he made the costume for the dance company. From there on he gained recognition and developed the confidence to move to the next stage in the class.

De Peaza was gaining legitimacy as a wire bender in the community. He could now use the knowledge to meet the needs of other members of the community and become productive in the process. He was learning through what Lave and Wenger (1991) define as legitimate peripheral

participation in communities of practice. However, something was also going on cognitively as he talked to himself. He was at the same time creating a schema that said he was good at it and could be better. Can the learning taking place here be categorized? If we did, where would we situate it: incidental, experiential, goal-directed, intentional, or would we locate it in the formal, informal, non-formal? From where I stand, the learning that is taking place is part of all the social activities in which De Peaza is involved. He is in more than one location—home, school, and community—that provide the space, the tools, and the opportunity for him to participate in a practice that he models and comes to enjoy. As a result, he begins to learn the craft and learn about himself, his needs, and those of his community. I must agree with Lave and Wenger that by looking at this learning process as distinct from the instructional activities, we find ourselves focusing on "aspects of learning experience that may be overlooked" (p. 41). How often do we consider, as educators, the kinds of learning experiences we are creating instead of whether or not the client is learning or we are teaching? The teacher created an opportunity for De Peaza to use his self-taught skills and make it into a learning experience.

Discussion

I dared to look to the people, whose "Carnival mentality" has come under fire, for an understanding of learning/teaching practices. Like Harvey (1983) and Liverpool (1990), I thought it was important to view this "Carnival mentality" differently. Liverpool, in his response to the assertion that Trinidadians have a Carnival mentality, argued:

> Many learned people speak of us as having a carnival mentality. In that way, they seek to degrade our people, for they seek to say that to possess such a mentality is to live for today, to play mas', to have a good time, and then to beg on Ash Wednesday. In other words, it is to live aimlessly. People who brand Trinidadians thus, do not understand what carnival is. They do not see beyond the tinsel, paint and feathers. They are yet to notice the creativity of mas' makers, the

imagination of bandleaders and masqueraders. (p. 10)

Harvey (1983), at a major conference on Carnival and its social and economic impact, stated that "the question is not so much does Carnival have a role to play in education, but what role does Carnival play in education?" Harvey, in her reflections on the topic, Carnival as an instrument of education, examined the informal and formal ways in which Carnival can be a part of the education process. She admitted that "we don't want to hear it said that we have a carnival mentality" (p. 235). However, she continued, "What is it about that mentality that we are rejecting? Can we by reflecting on carnival give our students that opportunity to also reflect and to better understand our 'mentality', our cultural identity?" (p. 235). Is there something happening here that we as educators should be aware of, and should take advantage of, in our quest to ensure "the right to education, education for all, no child left behind, success for all, quality education, continuing education, life long learning, and inclusive education"? Yes, Ahye (1991) warned that "Carnival defies generalizations and baulks at particularization" (p. 409), but that does not prevent us from exploring individual mas' camps and learning with and from the mas' makers.

I was amazed to learn that mas' makers who are now being sent out into the schools were given training in traditional notions of pedagogy before they were sent to the schools. The assumption seemed to be that they needed to become traditional teachers if they were to do a good job of teaching students to make mas'. On the other hand, I found that these men and women had their own ways of knowing and doing and ideas about how they learned to make mas'. Heath (2000), a scholar interested in learning in non-school contexts, states that "schools cannot offer the extensive time for practice and participation and build up of moral commitment and group discourse needed for students to develop all that employers, policy makers, and philosophers say will mark the future" (p. 34). How can we in our efforts to reconceptualize education make use of spaces like the Carnival mas' camps as sites for our understanding of what is informal learning in a Caribbean context?

Recommendations for Further Work

My goal is not to make the case for the mas' camp as another "formal school" or buy into the "urge to merge," but to suggest that we extend some of our resources into using these spaces as sites for informal learning. However, if continuing education, lifelong learning, a Caribbean Education for All, and indigenous learning systems are part of our policy discourse, then what better place to explore than the Carnival mas' camps and mas' makers of Caribbean Carnival! Given the thrust for modernization and globalization, there is a need for literacy; but Robertson (1992) reminds us that as members of oral cultures, we must never forget that "commonsense make before book." Indeed "after school learning" and "out of school learning" are not new to our societies. As far back as 1944, Carlton Comma, the then Librarian, commenced the Adult Education programme "conceived and designed as a method of education and uplifting the citizenry of Port of Spain via lectures, public forums, film shows and concerts" (Osborne, 2004, p. 10).

Notes

1. Kendall De Peaza requested that his name be used in the study.
2. I use be-come to suggest that the process never ends and we are always in a state of be-coming……..
3. Lewd suggestive dancing between persons.
4. Wenger, 1998.
5. Photographs from the field notes of Janice B. Fournillier.
6. Apprenticeship is being used as "speculation," a theoretical framework for analysing educational forms rather than historical forms of apprenticeship (Lave & Wenger, 1991, p. 31).
7. I was born and grew up in Belmont and my brothers attended Belmont Intermediate and so I was familiar with Cyril St. Louis. My god sister and brother were also members of the Dance Company.

References

Ahye, M. (1991). Carnival, the manipulative polymorph: An interplay of social stratification. In S. Ryan (Ed.), *Social and occupational stratification in contemporary Trinidad and Tobago* (pp. 399–416). St. Augustine, Trinidad: Institute of Social and Economic Research, UWI.

Anderson, J. R. (2005). *Cognitive psychology and its implications* (6th ed.). New York: Worth Publishers.

Bakhtin, M. M. (1981). *The dialogic imagination: Four essays (*M. Holquist, Ed.). Austin, TX: University of Texas Press.

Boal, A. (1985). *Theatre of the oppressed.* (C. A. & M. L. McBride, Trans.). New York: Theatre Communication Group.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Chang-Wells, G. L. M., & Wells, G. (1993). Dynamics of discourse: Literacy and the construction of knowledge. In E. A. Forman, N. Minick, & C. A. Stone (Eds.), *Contexts for learning: Sociocultural dynamics of children's development* (pp. 58–90). New York: Oxford University Press.

Cole, M., & Engestrom, Y. (1993). A cultural-historical approach to distributed cognition. In G. Salomon (Ed.), *Distributed cognitions: Psychological and educational considerations* (pp. 1–46). Cambridge, UK: Cambridge University Press

Evans, S., & Boyte, H. (1992). *Free spaces*. Chicago, IL: University of Chicago Press.

Fine, M., Weis, L., Craig, C., & Roberts, R. (2000). Educating beyond the borders of schooling. *Anthropology & Education Quarterly*, *31*(2), 131–151.

Fournillier, J. (2005). *Every year your remake yourself: An ethnography of learning/teaching practices in Trinidad Carnival mas' camps*. Unpublished doctoral dissertation, University of Georgia, Athens, GA.

George, J. (1986). *Street science -- An analysis of science-related social beliefs of secondary school students in Trinidad and Tobago*. Unpublished master's thesis, Queen's University at Kingston, Canada.

George, J. (1995). *An analysis of traditional practices and beliefs in a Trinidadian village to assess the implication for science education*. Unpublished doctoral dissertation, The University of the West Indies, St. Augustine.

George, J. (2001). *Culture and science education: A look from the developing world*. Retrieved April 13, 2007, from http://www.actionbioscience.org/education/george.html#Primer

Girvan, N. (2002). Carnival: *Realising the potential. (*The Greater Caribbean This Week). Retrieved February 2, 2004, from http://www.acs-aec.org/column/index23.htm

Green, J., & Luke, A. (2006). Rethinking learning: What counts as learning and what learning counts. *Review of Research in Education, 30*, xi-xvi.

Harvey, C. (1983, November 24–26). *Reflections on Carnival as an instrument of education.* Paper presented at the Seminar on Social and Economic

Impact of Carnival, The University of the West Indies, St. Augustine, Trinidad.

Heath, S. (2000). Making learning work. *Afterschool Matters, 1*(1), 33–45.

Ho, C. G. T., & Nurse, K. (Eds.). (2005). *Globalization, diaspora and Caribbean popular culture*. Kingston, Jamaica: Ian Randle.

James, C. L. R. (1993). *Beyond a boundary*. Durham, NC: Duke University Press.

John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist, 31*(3/4), 191–206.

Kirshner, D., & Whitson, J. A. (Eds.). (1997). *Situated cognition: Social, semiotic, and psychological perspectives*. Mahwah, NJ: Lawrence Erlbaum.

Lave, J. (1996). Teaching as learning in practice. *Mind, Culture and Activity, 3*(3), 149–164.

Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge, UK: Cambridge University Press.

Lave, J., & Wenger, E. (1991). *Situated learning: legitimate peripheral participation*. Cambridge England: Cambridge University Press.

Liverpool, H. (1990). *Culture and education: Carnival in Trinidad and Tobago — Implications for secondary schools*. London: Karia Press.

London, N., A. (2002). Curriculum convergence: An ethno-historical investigation into schooling in Trinidad and Tobago. *Comparative Education, 38*(1), 53–72.

Lovelace, E. (1998). *The dragon can't dance: A novel* (1st US ed.). New York: Persea Books.

Mason, P. (1998). *Bacchanal!: The carnival culture of Trinidad*. Philadelphia, PA: Temple University Press.

Manning, F. (1990). Overseas Caribbean carnivals: The arts and politics of a transnational celebration. In J. Lent (Ed.), *Caribbean popular culture*. Bowling Green, OH: Bowling Green University Popular Press.

Organization of American States. (2005, August). *Declaration and resolutions adopted by the Fourth Meeting of Ministers of Education,* Retrieved 2007, from www.oas.org/consulta/cyt/doc_cyt/ CIDI01540E03.DOC -.

Osborne, J. (2004, August). *The educational role of libraries: Case study of the national library of Trinidad and Tobago.* Paper presented at the World Library and Information Congress: 70th IFLA General Conference and Council, Buenos Aires, Argentina.

Pavlov, I. P. (1960). *Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex*. New York: Dover Publications.

Piaget, J. (1959). *The language and thought of the child* (3rd ed. rev. and enl.). London: Routledge & Kegan Paul.

Robertson, I. (1992). A realistic appraisal of literacy in an oral culture. In O. Kuboni (Ed.), *Literacy in the modern world: Proceedings of the symposium* (pp. 45–49). St. Augustine, Trinidad: Faculty of Education, UWI.

Rogoff, B., & Lave, J. (Eds.). (1984). *Everyday cognition: Its development in social context*. Cambridge, MA: Harvard University Press.

Schugurensky, D. (2002). Transformative learning and transformative politics: The pedagogical dimension of participatory democracy and social action. In E. O'Sullivan, A. Morrell, & M. A. O'Connor (Eds.), *Expanding the boundaries of transformative learning: Essays on theory and praxis* (pp. 59–76). New York: Palgrave.

Skinner, B. F. (1974). *About behaviorism*. New York: Vintage Books.

Spindler, G. D., & Hammond, L. (2000). The use of anthropological methods in educational research: Two perspectives. *Harvard Educational Review, 70*(1), 39–48.

Trinidad and Tobago. Ministry of Education. (2006a, October). *Conceptual framework for the National Open School System of Trinidad and Tobago.* Retrieved 24 March 2007. from http://www.moe.gov.tt/school_pdfs/NOSTT1.pdf

Trinidad and Tobago. Ministry of Education. (2006b). *Education for all action plan: Target 2015*. Retrieved 24 March 2007, from http://www.moe.gov.tt/ publications.html

Vygotsky, L. S. (1978). *Mind in society: Development of higher psychological processes.* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Wenger, E. C. (1990). *Toward a theory of cultural transparency: Elements of a social discourse of the visible and the invisible*. Unpublished doctoral dissertation, University of California, Irvine.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, U.K.: Cambridge University Press.

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action*. Cambridge, MA: Harvard University Press.

Wiltshire, F., & Steward, L. (1991). Educational research in the Caribbean. In *Strengthening educational research in developing countries: Report of a seminar held at the Royal Swedish Academy of Sciences, Stockholm, 12–14 September, 1991* (pp. 185–204). Paris: UNESCO.

Wolcott, H. F. (1994). *Transforming qualitative data: Description, analysis, and interpretation.* Thousand Oaks, CA: Sage Publications.

Appendix A: Kendall's Data

Standards for Making Mas' Work	• Not just beads and feathers or skimpy thing • Artistic form • Mas' as a finished product...give people something they can admire and appreciate • Ideas and concepts • More art to mas' • Gerald Kelly's concept • No half picked duck • Get on the ground when you ready the space needs to be ready don't just rush into it • Family community • Portray yourself into the form • Cleaning up the edges getting the work more professional and putting more into it
Values	• Individuality • Individual mas' players' space. Love and camaraderie and sharing • Inquiry • Reading to learn • Bravery • Understanding self and the meaning one makes • Understanding the balance • Life is a learning process • Individual teaching and learning relationships • When you close the door from going out nothing will come in
Beliefs Cultural, Social, Religious (What is mas')	• Mas' making a gift • Spiritual • Carnival art is not only about carnival it can be used for other purposes. Utilitarian • The art form does a lot for people that they are not aware of. It brings out range. It puts the thing on the outside so you can deal with it • In mas you are the costume • Carnival Tuesday belong to me and this is mine....and I have to enjoy myself • You are giving off a certain amount of energy • We are not all equal • Mas maker as instrument • What we say registers if you make a promise then you have to keep it • God is the master He can do anything not me • Need to cleanse yourself from the negative energy • If you don't like what you are doing then don't do it • Now I am working for the father • Give thanks for the pair of hands • Need to get into ourselves
Practices — Shared Historical Social Resources, Frameworks, and Perspectives that Support Mutual Engagement in Action	• Playing • Experimental work • Kendall teaches at the University and defines himself as a teacher when he works in the mas' camp • One method of learning he advocates is getting into the person's head...Minshall taught him this strategy as a way of understanding what the designer wants • Using the wire structure as a form • Hands on practice for the learners • Collaboration and helping each other working with the designer to achieve the goal • Problem solving (help others) • Seeing other people do papier mâché watching his uncle bend wire and add on to what they do fine tuning • Trial and error • Opening the valve
Mas' Camp Customs, Rules, and Standards	• Nobody debars you from going out (callaloo) • Cooperative spirit each one teach one
Skills and Areas of Expertise	• Wire bending • Sewing • Designing • Using fiber glass on wire • Papier mâché • Leather craft, Metal work, Aluminum work, Upholstery

Anti-Racist Education and Research:
A Vision for Caribbean Education in the 21st Century

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Abstract. This is a theoretical paper intended to discuss ideas on how anti-racist education and research can be approached in the Caribbean context. The paper seeks to examine the role of, and challenges, to anti-racist education and research in a contemporary new epoch, one that is remarkably different in its celebration of cultural fragmentation and pluralism as against the universalizing, homogenizing effects of rationality and scientism. I would not attempt to argue that there is a consensus out there on what constitutes anti-racist education and research. I only draw attention to certain basic challenges for those interested in the conduct of anti-racist work in the Caribbean.

Introduction

The paper has two aims: (a) to discuss the role of anti-racist education and research in the contemporary Caribbean as a vision for the 21st century, and (b) to examine the challenges to anti-racist education and research in the Caribbean context.

One of the problems of theorizing on anti-racist education generally is that not much work has been done in the area (at least until recently). Although anti-racist education issues are just beginning to be articulated in a comprehensive manner; nevertheless, it is important to recognize from the onset that scholars like Fanon (1963), Freire (1990), Nettleford (1962), Rodney (1972), and Williams (1944) have, to varying degrees, raised the issue of an education of the human mind that recognizes the variety of experiences and the history and achievements of all peoples. The confines of what constitutes anti-racist education in any setting, whether in North America or the Caribbean, is open to debate and discussion.

The discussion of anti-racism is complicated by the fact that terms, concepts, and conceptualizations such as race, racism, ethnicity, and ethnic boundaries, which are essential to a theoretical discourse on anti-racist education, are themselves subjected to different interpretations and analyses. This is usually the case with the use of conceptual and analytical categories that are themselves social constructs (Dei, 1996). The race concept, for example, does not carry a social significance in itself unless it is systematically paired with social rewards and penalties.

What is Anti-Racist Education and Research?

Anti-racist education means training people in the true meaning of equality and justice, through a critical pedagogical praxis that addresses issues of social inequality and ethnic oppression and discrimination in classrooms and schools. Anti-racist education is also a discourse about the social reality of ethnic groups within Caribbean schools. It discusses the wider social order against discrimination, prejudice, oppression, domination, and relative economic deprivation of certain segments of society. An anti-racist discourse therefore relates to the experiences of students in multi-ethnic schools and how these students contend with prejudice, discrimination, conflicts, and alienation within the education system. The broad issues of anti-racist education apply to most multi-ethnic and multiracial societies that have to contend with racial and ethnic tensions in schools. The general view of anti-racist education recognizes the theoretical inadequacies of any hegemonic discourse that does not correspond to the variety of human experiences that have shaped human growth and development (Buck, 1991).

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Why Anti-Racist Education and Research?

Few scholars today would deny that colonial education in the Caribbean and other developing countries was Eurocentric and ignored the achievements and contributions of the indigenous peoples and their ancestries. Colonial education, for the most part, did not cultivate the Caribbean student's self-esteem and pride. Education in the Caribbean today is still struggling to rid itself of this colonial legacy. Even today, in many circles, Western education and research are alive and well and continue to distort, misappropriate, and misinterpret Caribbean people's lives and subjective experience. This situation is adding to a long history of Euro-American dominance of what constitutes valid knowledge and how such knowledge is produced and disseminated internally and internationally. Undeniably, certain questions need to be asked about educational texts in the Caribbean and the messages/images being conveyed by the texts and instructors in the schools, and the current state of research been conducted. For example, how much about the Caribbean and the achievements and contributions of her peoples to world civilization is taught in the schools? How much of the existing Caribbean system of education is developed to seek legitimacy from the "outside"? How do the schools take up the issues of ethnicity and/or ethnic differences in society? And, given current economic constraints, how much are we (as Caribbean educators and researchers) actively engaged in the creation of analytical systems based on indigenous Caribbean concepts and their interrelationships?

Fortunately, such dominance is being challenged in the postmodernist call for the introduction, validation, and interrogation of "other" voices and ways of knowing in order to provide other, perhaps more complete, accounts of the history of ideas and events that have shaped human growth and development.

In the new cultural politics of difference, there is emphasis on the importance and contributions of diversity, multiplicity, and heterogeneity of ideas while rejecting the homogenous and monolithic (West, 1992).

What is the Role of Anti-Racist Education and Research in the Caribbean?

Anti-racist education and research can make significant contributions to the search for a more inclusive body of knowledge. Among the areas in which anti-racist education and research in the Caribbean can contribute to this task is the development of a Caribbean world-view as an alternative, non-exclusionary system of knowledge. A Caribbean world-view synonymous with progressive discourse can provide a framework and a rallying point for Caribbean identity and unity (Dei, 1996). Anti-racist education and research must demystify Eurocentrism and help to recover and restore the sense of pride in Caribbean identity. Through anti-racist education and research, the existing curricula in the schools can be reformed and education could be made to address issues of social discrimination and justice as well as serve local needs.

It is important to see anti-racist education in the Caribbean context as a critique of the ideas and practices within the schools and the wider social order that establish, promote, and perpetuate ethnic privilege and prejudice. Anti-racist education and research both constitute attempts to develop ways for Caribbean educators and researchers to critique and dismantle hegemony. The major task of anti-racist education, in terms of decolonization of the human mind, should be conceived in political terms. Anti-racist education is a critique and an indictment of ethnic and patriarchal hegemonies in society, and those institutional practices that have engendered differential sharing and distribution of power and privilege along race, ethnic, and class lines. It can be argued that racism as an ideology has historically supported the system of exploitation and oppression of one ethnic group over another. Likewise, certain classes in society have internalized a racial ideology of superiority, providing a rationale for their continued domination and exploitation of other people (Bolaria & Li, 1988). In effect, anti-racist education must be presented as political education in order to raise the level of individual and group consciousness, develop critical political thinking, and encourage activism among all students, teachers, and staff for meaningful change in

society. Instead of reifying power, anti-racist education should seek to question power and its rationality for domination (Freire, 1990; hooks, 1988; Walcott, 1990). This approach to anti-racist education should begin with a call for the fundamental restructuring of power and power relations in the school community and the wider society (Thomas, 1984). Anti-racist education and research must recognize the need to universalize knowledge, but on respectable and mutually beneficial terms to all parties. Anti-racist education must challenge any monopoly over what constitutes valid knowledge.

What are the Challenges to Anti-Racist Education and Research?

One of the greatest challenges to anti-racist education in the Caribbean lies in the area of curriculum reform and development. Educators must be aware of the critical role of teaching materials in effective learning (Farrell, 1989). There is an urgent need for comprehensive curriculum reform at all levels of the school system in the Caribbean. The goal is to ensure that education serves the needs of local peoples by addressing issues of social justice rather than helping to perpetuate ethnic and patriarchal hegemonies and class biases. The issue of educating the human mind in a manner that recognizes the variety of human experiences and the history and achievements of all peoples is fundamental to any anti-racist work in the schools of the 21st century.

The methodology for anti-racist education should seek to provide students and teachers with a lens through which to examine society. Through the lens, we will all be able to understand what we think we know about others and, more importantly, what we all do not know about ourselves (Buck & D'Amico-Samuels, 1991). To this end, anti-racist educators must arm themselves with the relevant knowledge in order to adequately prepare students against all forms of discrimination and to deal with the institutional structures that foster social inequities (Dei, 1996).

It is extremely important that anti-racist education seek to enhance the development of a counter-hegemonic discourse in the academy by insisting on the representation of alternative viewpoints in the writing and teaching of history,

social science, and other academic disciplines. It should start with the unmasking and deconstruction of hegemonic ideologies that facilitate the exercise of power in society. It should encourage all students to challenge any existing Eurocentric and patriarchal knowledge about their own societies and communities (Casey, 1991).

Anti-racist education and research should incorporate the individual and group lived experiences of students and teachers into critical pedagogical practices in the schools so as to understand social reality. Anti-racist educators must use relevant and critical teaching materials in their curricula and also focus institutional attention on ethnic bias and prejudice (Dei, 1996). Efforts to tackle issues of ethnicity and class biases in the schools are linked to the need for an alternative curriculum. Educators must reassess their pedagogical practices so that they cease to reproduce inequality, and instead draw on students' lived experiences as well as alternative world-views to develop an empowering, non-alienating curriculum for their schools (Prince, 1991).

Classroom pedagogy should focus on the examination of the ways in which ethnicity, class, and gender have differentially shaped the experience of being Caribbean for different groups at different points in time. It should discuss power and privilege across race, ethnic, and class lines as well as across other differences. It should acknowledge, and "educate," that an important aspect of institutionalized discrimination is the systematic misinformation about our own group and members of other groups, including both the privileged and the oppressed. Anti-racist educators must make it "safe" for students to challenge the status quo and to equip students with the intellectual and cultural capital to do so.

Casey (1991) pointed to another challenge for the anti-racist educator, when he argued that the nurturing aspect of a teacher's role in recent years has expanded to include respect for and sensitivity to cultural and ethnic differences. Some teachers in their pedagogical practices emphasize this aspect of avoiding conflict in the classroom. The idea apparently is to try as much a possible not to hurt anyone's feelings. This can pose a problem for anti-racist teachers if they are to confront and engage the hurt, pain, anger, and confusion that

can ensue in a classroom discussion in response to expressions about ethnic and anti-working class bias.

Through a dialectical pedagogy of anti-racist education, the teacher could tap students' anger and rage to rupture preconceived ideas or notions and stimulate critical analysis of the entrenched status quo and rigid orthodoxy (Casey, 1991). For the anti-racist educator, the challenge is to structure an environment of trust and respect in the classroom that would be conducive to a productive discussion of all forms of social discrimination. It is only through such a process that students can be equipped with a language and the intellectual capital to argue against those in the wider society who take discriminatory positions. Students can be collectively empowered from the engagement of these issues, particularly when teachers combine their anti-racist work with the need to provide students with valuable resources in terms of leadership skills and energy for human development. Given the many issues that the anti-racist teacher has to deal with, institutional support for anti-racist work is extremely important. If, as change agents, anti-racist educators and researchers do not have the support of institutional resources, as well as the full and enthusiastic endorsement of anti-racist education by school authorities, their work will remain incomplete. This is why it is important that the State gets actively involved in anti-racist education in our 21st century schools.

In discussing anti-racist education in the schools, the issues of educational equity, academic freedom, free speech, and fundamental rights of individuals are extremely important. For example, in the area of educational equity a fundamental question can be raised. How can anti-racist education achieve some of the key goals of social justice and a radical transformation of the power relations and institutional structures within which learning, teaching, and the administration of education take place in the schools? A starting point to accomplishing this goal is making our institutions of learning more accessible to the disadvantaged in society, particularly, those from poor economic backgrounds, as well as those ethnic groups that have been marginalized in the distribution of political power in society. The school community, particularly the institution of higher learning, prides itself on the right to free

speech and expression. The issue is how do anti-racist educators and researchers protect this right and also preserve respect and recognition for the basic human rights of all ethnic group members?

The institution and enforcement of critical standards in the selection and evaluation of all teaching materials utilized in pedagogical practices in the schools is not tantamount to a closure of academic enquiry of the human mind (Bloom, 1987). No one should have the right to falsify "history/herstory" or degrade racial and other ethnic groups, all in the name of academic freedom. Fortunately, many educators, while upholding the principles of intellectual freedom, would also support the promotion of non-discriminatory teaching materials and non-racist and non-sexist discourse. Many educators agree that for every earned right there is a concomitant responsibility or an appropriate duty. It is for this reason that any piece of academic research should be seen as political. Therefore, any academic work that ignores the political implications of society ought to be faulted.

Human dignity is critical to freedom and every youth has the right to grow up with positive self-esteem and an accurate image of the humanity of others. Ethnic and class bias, as well as sexism within the schools, inhibit the development of a positive self-image and human dignity, as well as the pursuit of personal happiness and liberty. The pursuit of anti-racist work presents a number of basic challenges for every educator, administrator, non-teaching staff, or student engaged in the Caribbean context.

I want to end this discussion by examining some of these personal challenges. As an African teacher and researcher, a basic challenge in pursuing anti-racist work is to present the histories and cultures of Caribbean peoples in a positive light, while at the same time not idealizing or romanticizing the past. In other words, the challenge is to present the truth about the past contributions of Caribbean societies to world civilization and, in doing so, not gloss over some unpleasant aspects of Caribbean cultural histories and experiences (e.g., political repression, slavery, gender exploitation, and the like). Another personal challenge has to do with the emerging role and place of subjectivity in the academic discourse on anti-racist education and trying to define one's politics within the academy. I support

postmodernist calls for the introduction, validation, and interrogation of "other" voices and ways of knowing in order to provide a more complete account of the history of ideas and events that have shaped human growth and development (Dei, 1996). I believe this objective can be achieved if researchers can undertake the task of presenting those human experiences that have so far been silenced in the discourses on the Caribbean.

However, there is another side to these personal challenges. As Casey (1991) points out, lived experiences by themselves cannot generate comprehensive correction. Such experiences are insufficient to transform social science discourse, since personal accounts are developed within the narrative structure and categories of bourgeois ideology. To me, this raises the question of how much anti-racist work one can do in the area of developing an alternative, non-exclusionary pedagogy or perspective and carrying out anti-racist work within the medium of Western hegemonic discourse and language.

Conclusion

The search for true equality and social justice for ethnic groups, the poor, and marginalized in the Caribbean is tempered by the realization that the principle of equal opportunity in an unequally structured society can be an illusion without a fundamental restructuring of society and its institutions. Educators and researchers must search for creative ways to pursue anti-racist education and research in the schools and the Caribbean social setting so as to uphold the social, cultural, political, and economic rights of all in the 21st century.

In particular, educators in the Caribbean must do more than merely admit to the Eurocentric nature of mainstream knowledge. As Paraschak (1991) has pointed out for all educators, we need to question existing concepts for their appropriateness to non-white peoples, and to reflect on our methodologies, the nature of knowledge, the weakness of existing literature, and what our appropriate roles as educators and researchers should be. We need to re-examine our classroom pedagogical styles that may alienate any students and other disadvantaged groups in society, and which may also be helping to distort a student's perception of reality and promote a false sense of superiority over other peoples of different sex, class, race, or ethnic background. We need to question these discriminatory educational practices that negatively impact upon students' positive self-esteem.

Anti-racist education must challenge the structures of power in society that control the educational system in order to make the system fair to all students. For all those who are concerned, the issue of improving the quality of education cannot be fully addressed without resolving the fundamental problem of equity and fairness. Social equity must not become a dream for others in society. Anti-racist educators must work to give "voice" to or create a "space" for the silenced and marginalized.

References

Bloom, A. D. (1987). *The closing of the American mind.* New York: Simon & Schuster.

Bolaria, B. S., & Li, P. S. (1988). *Racial oppression in Canada*. Toronto: Garamond Press.

Buck, P. D. (1991). The view from under the sink: Can you teach anthropology up when you aren't down? *Anthropology, 2*(1), 22–24.

Casey, G. (1991). Racism, anger, and empowerment: Teaching anthropology in a multi-racial working-class environment. *Transforming Anthropology, 2*(1), 9–15.

Dei, G.J.S.(1996). *Anti-racism education: Theory and practice*. Halifax, Canada: Fernwood Publishing.

Fanon, F. (1963). *The wretched of the earth*. New York: Grove Weidenfeld.

Farrell, J. (1989). International lessons for school effectiveness: The view from the developing world. In M. Holmes, K. Leithwood, & D. Musella (Eds.), *Educational policy for effective schools* (pp. 3–30). Toronto: OISE Press.

Freire, P. (1990). *Pedagogy of the oppressed*. New York: Continuum.

hooks, b. (1988). *Talking back: Thinking feminist, thinking black*. Toronto: Between the Lines.

Nettleford, R. (1962). Political education in the developing Caribbean. *Caribbean Quarterly, 7*(4), 203–212.

Paraschak, V. (1991, April). The Eurocentric nature of mainstream knowledge: A case study of native sport in Canada. *Windsor Researcher, Newsletter*, pp.1–2.

Prince, S. (1991). Discussion. *Transforming Anthropology, 2*(1), 37.

Rodney, W. (1972). *How Europe underdeveloped Africa*. Washington, DC: Howard University Press.

Thomas, B. (1984). Principles of anti-racist education. *Currents, 2*(2), 20–24.

Walcott, R. (1990). Theorizing anti-racist education. *Western Canadian Anthropologist, 7*(2), 109–120.

West, C. (1992). *Race matters*. Boston, MA: Beacon Press.

Williams, E. (1944). *Capitalism and slavery*. Chapel Hill, NC: University of North Carolina Press.

The Importance of Learning Foreign Languages in Trinidad and Tobago

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Abstract. By learning a foreign language, students are exposed to a new and exciting world and get close to other people and to cultures that possess different systems for explaining and understanding world phenomena. This experience broadens the learners' minds and makes them appreciate other lifestyles that are neither better nor worse, but different. Tolerance and respect for others are highly valued in the world today and we all need to be educated in these values. In this respect, the Centre for Language Learning (CLL) has an important role to play for the university and the larger community of Trinidad and Tobago. These are issues addressed in this paper, which presents and analyses data from questionnaires distributed to CLL students at the beginning of Semester 2, 2006–2007. The purpose of the survey was to have a better picture of our students so that we could design programmes that meet their needs and expectations.

Introduction

The following is a presentation of the results of a survey carried out in the Centre for Language Learning (CLL) at The University of the West Indies (UWI), St. Augustine, to get a better picture of the students coming to this department to learn a foreign language for the first time. The survey aimed at finding out why students considered learning languages to be important, why they had decided to study their language of choice, and what their expectations were by the end of their language study.

The CLL was established in 1997 as the department at UWI, St. Augustine, responsible for teaching Spanish and French to its students and staff. The CLL offers foreign language courses to undergraduate and postgraduate students not reading for a degree in foreign languages. These courses, which are also made available to the wider community, are offered at three levels of proficiency—Level 1, Level 2, and Level 3.

Teaching at the CLL started in January 1998, and since then there has been a steady increase in the number of registrants. In the case of Spanish, the increase in the number of students has been very high, from 91 in 1998 to 658 in 2006. The number of languages offered at the CLL has also grown in the past 10 years. In addition to Spanish and French—the two most popular languages—the CLL offers courses in Arabic, (Mandarin) Chinese, German, Hindi, Italian, Japanese, Portuguese, and Yoruba. English as a Foreign Language is also taught to international students and professionals.

The CLL follows a communicative approach to language learning, and the four language skills—speaking, listening, writing, and reading—are integrated in our courses. Students at the CLL are directed towards the learning of a foreign language for practical purposes related to operating in a real world. The approach, therefore, is functional and aims at developing communicative competence in order to interact with speakers of the target language and realize specific communicative objectives.

It is universally acknowledged that competence in foreign languages is essential for more effective communication in our increasingly globalized world. One learner of Spanish recently remarked that in Trinidad and Tobago today, to be functional in Spanish is as necessary as having an e-mail account.

It is evident, too, that when students learn a foreign language they have the opportunity to get closer to other nations and cultures that possess different linguistic systems for explaining and understanding world phenomena. Research is showing that learning a foreign language helps in developing a more positive attitude towards the target language (American Council on the Teaching of Foreign Languages, 2006). By

learning another language, students are able to enter a new and exciting world and so discover different people and customs, while rediscovering their own language and culture. This experience broadens the learners' minds and makes them appreciate other lifestyles that are neither better nor worse, but different. The CLL's philosophy acknowledges the fact that an important part of knowing a foreign language is developing a critical understanding of the target cultures, and developing an ability and willingness to engage with these cultures.

This emphasis can also be found in the United States (US). According to Daniel Yankelovich (2005), who is very adamant about it, the country "must become less ethnocentric, less patronizing, less ignorant of others, less Manichaean in judging other cultures, and more at home with the rest of the world. Higher education can do a lot to meet that important challenge" (p. B6)

Survey

A questionnaire was designed and distributed to Level 1A students at the beginning of the second semester, January–April 2007 (see Appendix A). These were students registered for courses designed for absolute beginners or students with very limited knowledge of the language. There was no Yoruba class that semester due to a low registration, nor a (Mandarin) Chinese class as the new teacher appointed by the Chinese Government had not yet arrived. The questionnaires were administered by the tutors of the different languages during the first week of the semester. A detailed analysis of the data collected follows.

Detailed Analysis of the Data

Some Numbers

As Table 1 shows, we have approximately the same number of learners who are already studying at UWI (either as undergraduates or postgraduates) as beginners who work at UWI or outside the university (generally older). We understand that some postgraduate students might also be employed.

This is an indication that learning foreign languages attracts far more people than just students and is seen as being part of a lifelong learning strategy. It also gives more weight to the

results of this survey as it takes into consideration a much larger spectrum of learners' backgrounds.

Our external/staff working population seems to come from all kinds of professional fields, with somewhat of a fairly strong academic background. The top four professional groups are teachers, secretaries, engineers, and technicians. The need and/or desire to learn a foreign language seems to be of greater importance to these professions.

Table 1. Numbers of CLL Beginner Students According to Languages Being Learned & Occupations (Semester 2, 2006–2007)

Languages	Answered	UWI Students	External/ Staff
Spanish (8 groups)	110	48	62
French (3 groups)	48	24	24
Arabic (2 groups)	26	13	13
German (1 group)	19	8	11
Japanese (2 groups)	17	7	10
Hindi (1 group)	15	10	5
Italian (1 group)	13	5	8
Portuguese (1 group)	13	7	6
Total	261	122	139

Of the 261 CLL beginner students, 127 had already studied at least one other foreign language prior to the one they had just registered for; this is almost half of our new students.

Spanish and French dominate the list. For most students, these languages were probably studied at the secondary school level. In the case of Spanish, students in Trinidad and Tobago have to study this subject up to Form 3.

Another finding is that our new learners of Spanish are among the respondents who studied another language the least often.

Some learners seem very enthusiastic indeed:

- *I like learning different languages*
- *it is fun & interesting to learn & know several languages rather than just 1 or 2*
- *my love for languages would motivate me*
- *I intend to do a lot more languages*

Table 2. Most Often Cited Professions of CLL External/UWI Staff Learners Doing a Foreign Language *ab initio* (Semester 2, 2006–2007)

Teacher	17
Secretary	11
(Civil) Engineer	7
Technician	7
Accountant	4
Clerk (Stenographer)	4
Bank Teller	3
Lecturer/Assistant Lecturer	3
Marketing Assistant	3
Public Servant	3
Attorney	2
Clerical Assistant	2
Consultant	2
Lab Technician	2
Project Officer/Manager	2
Research Assistant	2
Researcher	2
Retiree	2
Tutor	2

Table 3. Other Foreign Languages Already Studied by CLL Beginner Student Population (Semester 2, 2006–2007)

Spanish	88
French	67
German	8
Hindi	6
Italian	5
Portuguese	5
Mandarin Chinese	2
Arabic	2
Japanese	2
Creole	1
Greek	1
Haitian	1
Indonesian	1
Korean	1
Latin	1
Sanskrit	1
Yoruba	1

Our data point out an interesting fact: it seems that learning a first foreign language quite often made our learners want to learn another one.

Table 4. Number of Different Foreign Languages Already Studied by CLL Beginner Student Population (Semester 2, 2006–2007)

One only	83
Two	31
Three	8
Four	3
Five	1
Seven	1
Total	**127**

These figures are proof of the importance given in today's world to knowing not only one foreign language but to increasingly being knowledgeable in more than one. The European Union certainly facilitates such a trend among its citizens:

> The European Union actively encourages its citizens to learn other European languages, both for reasons of professional and personal mobility within its single market, and as a force for cross-cultural contacts and mutual understanding. The Union also promotes the use of regional or minority languages, which are not official EU languages but which are spoken by up to 50 million people in the Member States, and as such form part of our cultural heritage.
>
> The ability to understand and communicate in more than one language – already a daily reality for the majority of people across the globe - is a desirable life-skill for all European citizens. Learning and speaking other languages encourages us to become more open to others, their cultures and outlooks; it improves cognitive skills and strengthens learners' mother tongue skills; it enables us to take advantage of the freedom to work or study in another Member State. (Europa, 2006)

Importance of Learning Foreign Languages

On the importance of learning foreign languages, participants in the CLL beginner courses gave very similar reasons irrespective of the languages learned. These reasons—with samples of answers—are listed below in order of importance. The figures in parentheses correspond to the number of times these items were cited by students.

For communicating with foreigners (99)

- *to communicate with speakers of the language whether in a business or tourist setting*

- *to be able to communicate with others who do not speak my language*

- *to meet, greet and understand foreigners*

- *we do have tourist [sic] arrive from all over the world*
- *to communicate effectively*
- *to converse with others especially internationally in a diversified environment*
- *I would like to be able to communicate with others that don't speak English*

The importance of culture (68)

- *it opens up your world to different cultures*
- *to become deeper entrenched in the culture of the country*
- *gives me the opportunity to learn about other peoples & their cultures*
- *opens your mind to another culture & country helping you learn about your world*
- *it enhances & facilitates intercultural relationships/communication*
- *to be at least slightly familiar with other people's culture*

For increased marketability (63)

- *foreign languages increase a person's marketability*
- *increasing globalization is making markets smaller*
- *important for making oneself more marketable in the workplace*
- *because it is important in acquiring jobs especially jobs on an international scale*

For personal growth (50)

- *for education and to become knowledgeable*
- *it can help you enhance your educational level*
- *the opportunity to increase your personal development*
- *fosters a sense of growth & development*
- *I believe it serves to make one a more well rounded individual*
- *to help improve your culture*
- *it builds character because knowing another language improves communication*
- *it decreases your limits*

- *it makes me into a flexible individual; I am no longer confined to the English language*

For travelling to foreign shores (47)

- *plan to travel to South America and don't want to get stuck there*
- *it makes it easier for travel to a foreign country*
- *it is important as one may be an ambassador for his/her country*
- *international travel is more convenient and affordable*
- *it certainly allows you to not just be an outsider when you visit a foreign country*

The globalization approach (46)

- *one does not live by himself*
- *because society today requires it*
- *the world becoming more of a global village, it's important to learn a foreign language*
- *we are interacting in a global environment with people of different cultures*
- *enables better communication among countries*
- *being restricted to one language, in the age of globalization, to me does not make sense*
- *in order to fully comprehend the world in all its grandeur*

In a globalized world, our students know the importance of good communication, which cannot rely solely on the English language. Communication barriers can be taken down through learning foreign languages. This priority given to communicating with foreigners is echoed again by Yankelovich (2005), who predicts that in US colleges by 2015, "language courses will be re-examined for their practicality in communicating colloquial spoken language" (p. B6). Our students know as well that a language is also a culture, and that like two sides of the same coin, they have to be apprehended together.

The Modern Language Association in the US recognizes this undeniable double aspect of teaching a foreign language:

> Culture is represented not only in events, texts, buildings, artworks, cuisines, and many other artifacts but also in language

itself. Expressions such as "the pursuit of happiness," "liberté, égalité, fraternité," and "la Raza" connote cultural dimensions that extend well beyond their immediate translation. As recent world events have demonstrated, deep cultural knowledge and linguistic competence are equally necessary if one wishes to understand people and their communities. (Modern Language Association, 2007, para. 5)

Finally, students emphasized the intellectual/cognitive benefits that learning a foreign language can generate.

We further asked our students to be more specific about the language they had just embarked on learning so as to get a more accurate picture of the attractiveness of the different languages on offer at CLL.

Why Learn Spanish

The results for Spanish follow. They are given in decreasing order of importance. The numbers in parentheses are the number of times these particular reasons were given. Sample answers have also been added to give a stronger sense of what is meant. The closeness of the Hispanic world, its increasing importance in terms of business opportunities, and the fact that Spanish is already part of Trinidad and Tobago future development plans are the determining factors behind the undeniable success that this language meets at the Centre for Language Learning.

Close proximity to Latin America (28)

- *proximity to Venezuela/Spanish speaking countries, Margarita & Cuba*
- *due to the fact that we are surrounded by Spanish-speaking countries*
- *Central & South America has 300 m persons that speak Spanish right next door to TnT*

For professional development (22)

- *I need it for my job requirement*
- *in my line of work I am constantly in situations where I have to meet and greet Latinos*

- *my chances of getting my desired job would be better*
- *I can work with Venezuelan in both countries*
- *our country/region will be conducting a lot of business with Latin countries due to FTAA*
- *we engage more frequently with Latin American countries*

The most spoken language in this region (18)

- *Spanish, I think is spoken a lot in this part of the world*
- *I chose Spanish because it is a main language spoken in the Caribbean*
- *the language most spoken in the Caribbean*
- *because it is very common in this part of the world*
- *it is a largely spoken language in neighbouring countries*

Spanish is the second language of Trinidad (15)

- *it is the second official language of T&T*
- *T&T aim is to make Spanish our 2nd language*
- *it is becoming our second language*
- *Trinidad is becoming bilingual so Spanish will become essential*
- *I choose Spanish because it is our first foreign language in Trinidad and Tobago*

I like it (11)

- *I always had an interest in the language and I think it is a great language*
- *I am interested & fascinated by the Spanish culture, music, dance, language and clothing*
- *a passion to learn Spanish/expand my knowledge of the language since secondary school*
- *I think it romantic*

Why Learn French

The possibility of travelling to French-speaking countries, including the French Caribbean islands, the positive image that the language seems to

carry, together with the fact that it is already offered in some secondary schools that are considered to be prestigious, explain for the most part the fact that French is the second most learned foreign language at the CLL.

To travel to French-speaking countries (10)

- *we are fairly close to some French-speaking islands*
- *I will like to travel to those islands some day*
- *one of my dreams is to travel around the world & France is one destination I would go*
- *I have to travel to Tunisia to visit my husband & as such am studying French*
- *in order to be able to converse with the locals*

Always dreamed that I could speak French (8)

- *is a very beautiful language*
- *fascinated by its sound*

I have a background in French (8)

- *since I could not do it in detail during secondary school*

- *I always hoped one day I would get another chance to learn it*

I am based in Hospitality (3)

- *there is a lot of French words & terms associated with this field*

Thinking of migrating to Canada (3)

- *intentions of living in Canada in the near future*

I never had a chance to study it (3)

- *not exposed to it at secondary school*
- *I have never been exposed to French*

Why Learn German/Japanese/Italian/Portuguese

The desire to travel to the respective countries one day is the reason most often given for learning German, Japanese, or Italian. A second incentive is the attractiveness of the related culture in the case of Japanese, Italian, and Portuguese. Planning further studies certainly plays an important role when studying both Japanese—through the JET programme—and German.

Table 5. Most Often Cited Reasons for Learning Either German, Japanese, Italian, or Portuguese at CLL (Semester 2, 2006–2007)

German	may be required *to visit German-speaking countries*/to be able to live in a German-speaking foreign country *(4)* for *business & study*/I am planning to study in Germany *(3)* became interested after spending time with Austrian *friends*/my best friend is German *(2)*
Japanese	this particular Asian culture has always been of great interest to me/am fascinated by all facettes [sic] of the Japanese way of life/*have always been interested in Japanese culture (5)* I would like to visit it one day/*travel plans*/I hope to visit *(4)* I applied to the *JET programme*/would also allow me to participate in the JET programme should the opportunity arise/was a JET participant *(3)* because I studied a bit of *Martial Arts*/I studied martial arts *(2)*
Italian	hope/plans to visit Italy/Rome one day (4) interested in their *culture (3)* it's *a gorgeous country*/I am fascinated with the country *(2)*
Portuguese	it is close to Spanish (2) I'm also interested in *their culture, music*, etc. *(2)*

Why Learn Arabic/Hindi

The religious reasons come foremost for these two languages, especially so for Arabic. The learners of Arabic and Hindi also give more importance to

reading and writing skills—skills that would evidently allow them to have a direct access to their respective religious sacred texts (see the paragraph on CLL learners' expectations).

Table 6. Most Often Cited Reasons for Learning Arabic or Hindi at CLL (Semester 2, 2006–2007)

Arabic	*I am a Muslim*, & this course would assist me in the pronunciation & reading of the Quran better be able *to understand the Quran* better by not being dependant [sic] on English translations which may exclude certain connotations, etc. attached to the original Arabic text *(15)* *job opportunities*/possible career path/in my field of study there are excellent jobs in the M.E. *(3)*
Hindi	*religious reasons*/it is able to help me in other religious studies *(5)* I have always enjoyed *Indian movies, song*/music & would like to understand them better *(3)* it has always interested me (3)

The Words That Pop Up

We also asked our respondents to list the words (up to six) that popped up in their mind when thinking about the language/culture they had just started learning, something resembling the analytical association first developed by Sigmund Freud (1949). Tables 7–9 list all these words for Spanish, French, and all the other languages taught at CLL.

We have not included the words and phrases (*buenos días*, *bonjour*, *Fraülein*, etc.) written in the target languages, which we thought students either remembered from previous exposure to the languages or because of what they had just learned at the CLL prior to filling in the questionnaires. For the most part, answers correspond to places, cultural icons, or traits that are most often associated with the corresponding cultures. They also list some qualifying adjectives that, for students, seem to be typical of the language/cultures learned. For complete sets of words, please refer to Appendices B to D.

Table 7. Important Words That Students Learning Spanish *ab initio* Associate With That Language/Culture (Semester 2, 2006–2007)

Spanish			
dancing (12) food (9) exciting (7) music (7) fun (6) friends (5) interesting (5)	salsa (5) travel (5) new (3) Shakira (3) Venezuela (3) business (2) cha-cha-cha (2)	flamenco (2) challenge (2) Cuba (2) energy (2) F. Castro (2) fiesta (2) history (2)	Latin (2) singing (2) Spain (2) football (2) tango (2) vibrant (2)

For learners of Spanish, music and dancing seem to be key elements of the Hispanic culture, with four different dances named several times (salsa, cha-cha-cha, flamenco, and tango).

Table 8. Important Words That Students Learning French *ab initio* Associate With That Language/Culture (Semester 2, 2006–2007)

French		
couture/style/fashion (8) Eiffel Tower (6) food (5) Paris (5) romance (5) wine(s) (4)	romantic (3) café(s) (2) champagne (2) croissant(s) (2) culture (2) exciting (2)	French revolution (2) fun (2) history (2) vibrant (2)

French and Italian are the only two languages strongly associated with the idea of love and romance. The students also mentioned emblematic cities such as Paris, Rome, and Venice.

Table 9. Important Words That Students Learning Other Languages *ab initio* Associate With These Languages/Cultures (Semester 2, 2006–2007)

Arabic	German	Japanese	Hindi	Italian	Portuguese
Islam (10)	Berlin wall (3)	karaoke (3)	religious (3)	food (4)	football (9)
Qur'an (6)	cars (3)	anime (2)	Bollywood 2)	pasta (3)	carnival (6)
Muslims (4)	football (3)	car names (2)	India (2)	couture/fashion (2)	Rio de Janeiro (5)
Saudi Arabia (4)	culture (2)	different (2)	interesting (2)	people (2)	samba (4)
Allah (3)	Hitler (2)	Fuji (2)		romance (3)	Brazil (2)
Muhammad (3)	war (2)	history (2)		romantic (2)	Copacabana (2)
Arab(s) (2)	Wunderbra (2)	kanji (2)		Rome (2)	women (2)
beautiful (2)		new (2)		Vatican (2)	
complex/		origami (2)		Venice (2)	
complicated (2)		samurai (2)			
desert(s) (2)		sushi (2)			
Middle east (2)		Tokyo (2)			

Expectations

We also asked our students what their expectations actually were concerning their learning. We wanted them to tell us what they thought they would know or be able to do by the end of their study of the foreign language. We suspect that some students misunderstood the question and only wrote down what they had in mind for the end of the 12-week beginner course they had just started doing. This fact could explain the high number of students having very basic expectations concerning their study. But a significant number of them were aiming high and had the intention of mastering the language. Numbers are only given for the "Basic Expecters" and the "High Expecters." Other answers were very diverse (and therefore much more difficult to count) but revolve mainly around three main objectives: being able to have a conversation, cultural awareness and knowledge, and also developing reading and writing skills in the foreign language.

The very general statements

- *a better understanding of the language*
- *understand the written & oral language*
- *speak, read & write the language*

The "basic expecters" (95)

- *survival phrases*
- *to have a basic understand (at least) of the language*

- *be able to speak simple, everyday speech in Spanish*
- *be able to translate (at a minimal level at least) English to Portuguese*
- *to communicate briefly with others in terms of greeting, etc.*
- *talk comfortably about basic things with a Japanese person*
- *be able to navigate streets, towns in a French-speaking country*

Moving up to

- *to move on with a bit of fluency*
- *speak to a certain extent*
- *to be reasonably conversant in it*

The "high expecters" (58)

- *read and speak Spanish fluently*
- *understand and speak language with confidence*
- *I expect to be fluent in Italian*
- *speak & carry on a fluent conversation in the language*
- *literate in the language*

The conversational emphasis

- *to be able to listen/understand as well as contribute to a discussion in German*
- *carry on everyday conversation with Italian speakers*

- *converse in Arabic*
- *be able to have a simple, functional conversation*
- *speak fluently and understand conversational Spanish*
- *speak conversationally to my Spanish friend*
- *to converse with my clients*

The reading/writing skills not forgotten

- *be able to use it comfortably in the written word*
- *read newspaper & magazine*
- *be able to write correspondence*
- *understand the Quran while I read it*
- *read & write basic French*
- *do read Hindi verses confidently*
- *read with less frequent trips to the dictionary*
- *to be able to read the works of Japanese writers*

The culture also

- *to know more about Indian culture*
- *learn about food that Germans eat*
- *to gain a better understanding of Spanish culture*
- *I have been studying German for a while and choose to do it because of the culture*
- *my motivation is my passion for the Spanish culture*

Conclusion

As students overwhelmingly mentioned, learning a foreign language is not just about studying grammar rules and learning lists of vocabulary or even being able to converse in the target language. It is also a way to open up to a brand new world and experience. In bringing down language barriers, it teaches tolerance and respect for others. And if on top of all this, being able to speak a foreign language qualifies you for a job, we can definitely say that students greatly benefit from the experience.

As a respondent put it, the world is not limited to English-speaking countries alone. In this endeavour, not to be limited by one language but being exposed to more than the English world, the CLL at UWI, St. Augustine, has a major role to play in this area, not only for its students but also for the wider community of Trinidad and Tobago.

The CLL is currently revising its course outlines and choosing new textbooks for French and Spanish to start offering credits for courses in these two languages in September 2007. Other languages should follow in the 2008–2009 academic year. The credit-bearing courses will attract more UWI students to the CLL, who will definitely benefit from their language learning experience, which, as some students very rightly put it, can also *be fun* and *exciting*.

The great Nobel Laureate for literature, V.S. Naipaul, remarked during the Evening of Appreciation organized by UWI on the occasion of his 75th birthday (18 April, 2007) that "to understand the world, you have to discover other cultures." We think that there is no better way to discover other cultures than to learn foreign languages.

References

American Council on the Teaching of Foreign languages. (2006). *What does research show about the benefits of language learning*. Retrieved April 16, 2007, from http://www.discoverlanguages.org/i4a/pages/index.cfm?pageid=4524

Europa. (2006). *Languages and Europe: Language learning*. Retrieved April 16, 2007, from http://europa.eu/languages/en/chapter/14

Freud, S. (1949). *An outline of psycho-analysis*. New York: Norton.

Modern Language Association. Ad Hoc Committee on Foreign Languages. (2007). *Foreign languages and higher education: New structures for a changed world*. Retrieved April 16, 2007, from http://www.mla.org/flreport

Yankelovich, D. (2005, November 25). Ferment and change: higher education in 2015. *Chronicle of Higher Education*, *52*(14), p. B6.

Appendix A: The Questionnaire

SURVEY FOR STUDENTS STARTING A FOREIGN LANGUAGE BEGINNERS COURSE
CENTRE FOR LANGUAGE LEARNING
UNIVERSITY OF THE WEST INDIES

This survey is meant to know you better so that we can teach you better!

Date:

_____

First name: _____

Are you a UWI student ?   Yes   No   and/or

Occupation: _____

1. Why do you think that learning a Foreign Language is important ?

2. Language you are about to study : _____

   Why did you choose to learn this particular language rather than another one ?

3. What do you already know about the language and/or culture that you have chosen to

   study ?

4. What are the few words that pop up in your mind when you think of the particular

   language and/or culture you are going to study ?

5. What do you expect to know or be able to do by the end of your study of this

   language?

6. Finally, how would you summarize your motivation for doing this particular course?

7. Have you learned another Foreign Language apart from the one you are doing now ?

   Yes   No

   If Yes, which language was it ?   _____

   For how long did you study it ?   _____

Appendix B
Words That CLL Students Learning Spanish *ab initio* Associate With That Language/Culture
(Semester 2, 2006–2007)

Spanish				
dancing (12)	singing (2)	cross-border	Havana Nights hot	religious
food (9)	Spain (2)	culture	Hugo Chavez	rhum
exciting (7)	football (2)	curiosity	Julio Iglesias	rich culture
music (7)	tango (2)	difficult	learning	rules
fun (6)	vibrant (2)	dirty	lifestyle	rumba
friends (5)	adventure	dynamic	lunch	sassy
interesting (5)	architecture	educating	marketability	sexy
salsa (5)	art	enjoyable	Meringue	shopping
travel (5)	awareness	entertaining	money	speak fast
new (3)	banjo	ethnicity	motivation	speaking
Shakira (3)	Barcelona	exchange	multi-ethnic	spicy
Venezuela (3)	basic	exotic	parang	spicy food
business (2)	conversation	family life	peace	spiritual
cha-cha-cha (2)	beautiful	festivals	people	style/fashion
flamenco (2)	beers	friendly	peppers	taxi
challenge (2)	bullfighting	full of	piňa colada	tortilla
Cuba (2)	burritto	expressions	places	traditions
energy (2)	Christmas	Gen. Franco	practice	understanding
F. Castro (2)	close-knit	geography	quickly	water
fiesta (2)	colourful	greetings	Real Madrid	words
history (2)	complicated	guitar	reggoeton	
Latin (2)	cornmeal	happy		

Please note that the way some of these words are spelt reflects the students' way of writing them.

Appendix C
Words That CLL Students Learning French *ab initio* Associate With That Language/Culture
(Semester 2, 2006–2007)

French			
couture/style/fashion (8)	history (2)	exquisite	Napoleon
Eiffel Tower (6)	vibrant (2)	fine art	Nice
food (5)	Arc de triomphe	football	origin
Paris (5)	architecture	French bread	passion
romance (5)	Avignon	glamour	restaurants
wine(s) (4)	blue cheese	haute	Sainte Lucy
romantic (3)	Bordeaux	hospitality	sexy
café(s) (2)	challenging	I love you	sidewalk Cafes
champagne (2)	Champs Elysées	industry	sophistication
croissant(s) (2)	classy	Les Bleus	TGV
culture (2)	cuisine	lifestyle	travel
exciting (2)	Dijon	love	tri-lingual
French revolution (2)	education	Marseille	yogurt
fun (2)	exotic	music	

Please note that the way some of these words are spelled reflects the students' way of writing them.

Appendix D
Words That CLL Students Learning Languages Other Than Spanish & French *ab initio*
Associate With These Languages/Cultures
(Semester 2, 2006–2007)

Arabic	German	Japanese	Hindi	Italian	Portuguese
Islam (10)	Berlin wall (3)	karaoke (3)	religious (3)	food (4)	football (9)
Qur'an (6)	cars (3)	anime (2)	Bollywood 2)	pasta (3)	carnival (6)
Muslims (4)	football (3)	car names (2)	India (2)	couture/fashion	Rio de Janeiro
Saudi Arabia (4)	culture (2)	different (2)	interesting (2)	(2)	(5)
Allah (3)	Hitler (2)	Fuji (2)	ancestral	people (2)	samba (4)
Muhammad (3)	war (2)	history (2)	ancient	romance (3)	Brazil (2)
Arab(s) (2)	Wunderbra (2)	kanji (2)	beautiful	romantic (2)	Copacabana (2)
beautiful (2)	architecture	new (2)	different	Rome (2)	women (2)
complex/	beer	origami (2)	easy speaking	Vatican (2)	bossa nova
complicated (2)	clean	samurai (2)	exotic	Venice (2)	capoeira
desert(s) (2)	surroundings	sushi (2)	Ganges river	art	coffee
Middle east (2)	(in the cities)	Tokyo (2)	grandparents	Colosseum	diversified
belly dancing	cuisine	advanced	Hindu	different country	culture
emotional	cultured	architecture	Hindu culture	exciting	Europe
Hajj	demographic	art	Krishna	extraordinary	food
hard	Deutshland	beauty	music	family oriented	history
Imam	difficult	complex	new	friendly	humour
kebabs	efficiency	cuisine	pany-water	history	Jesus statue
lamb tagine	engineering	difficult	proud	hot	Lula
medicine	European	dynasties	respectful	intense	Maradona
nomads	formality	environmental	Sanskrit	Italy	Pele
North Africa	exciting	preservation	scriptures	love	pioneers
oil	friendly	exciting		Oleo	Portugal
powerful	Ger.	festivals		olive	rain forests
rich	unification	haiku		pesto	regional
sand	guttural	humility		pizza	superpower
sheik	pronunciation	interesting		Pope	Sao Paolo
Spain	interesting	kabuki		sensual	warmth
strict	local dialect	kimono		Sophia	
the dates (snack)	Mercedes	Kyoto		spaghetti	
U.A.E	Benz	Made in Japan		vibrant	
unusual	new	no real age		vivacious	
	Oktoberfest	barriers		wine	
	orderly	progress			
	people	recycling			
	refreshing	serenity			
	religion	technology			
	research	tradition			
	science	writing			
	technology				
	unique				
	Volkswagen				
	weather				
	World Cup 06				

Please note that the way some of these words are spelled reflects the students' way of writing them.

Reconceptualizing Vocational Education and Training (VET) in Caribbean Schooling

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Abstract. Technical and vocational education and training (TVET) has had an uneven history in secondary education in the Caribbean, which is no different from the experiences of many developing and emergent countries. Many problems tend to beset the introduction of such subjects in the schools, including (a) high cost, (b) low status, (c) poor integration with the academic curriculum, (d) indifferent attention to teacher preparation, (e) tendency to be offered to low academic performers, (f) assessment and certification difficulties (low pass rates), and (g) programme maintenance issues. Over the decades, there has been a strong message from the World Bank that investment in TVET is a low funding priority, on the premise that such investment does not yield suitable returns. This paper contends that TVET has a vital role to play in Caribbean education, and in the development of the region. But the approach cannot be business as usual. There is need for new paradigms. The paper reflects on the record of TVET offerings in Caribbean schools, and offers some likely futures—alternative models—that might be considered in moving forward. A rationale for the models is provided, and strengths and weaknesses of each offered. Implications issuing from the proposal are set forth, in realms such as educational policy, teacher preparation, and curriculum development.

Introduction

As in most developing economies, countries of the Caribbean have been challenged by the question of vocational education and training (VET) provision. The primary hurdle, especially in the Commonwealth Caribbean, has been that of a hand/head ontology, which, from the outset, positions VET as education for those who cannot cope with the rigours of academic learning. Thus, VET is conceived as alternative education, for the failing class. This fundamental value position in the region has meant that throughout the post-Independence period, we have imagined and organized education in keeping with the basic dualistic and hierarchical logic. Overwhelmingly, the thrust of educational provision has been toward the development and expansion of academic education at all levels. VET has not had comparable treatment. In this regard, the region has created the needed infrastructure of teachers' colleges and the various branches of The University of the West Indies (UWI) to provide the teaching force, and in the Caribbean Examinations Council (CXC), a means of setting academic standards for the critical secondary school level. But despite diversification of the curriculum as part of secondary school expansion (e.g., Trinidad and Tobago's comprehensive schools and Jamaica's new secondary schools), we have seen no comparable effort as with academic subjects to provide comparable structures. The existing stock of institutional infrastructure does not vary much from what obtained near independence, even though institutions such as HEART Trust/NTA have been able to reach many. The irony here is that even though VET generally is viewed as default education for students who cannot cope with academics, the real truth is that this is the area of education where the region has struggled to develop competence, and where we remain severely dependent still. Despite the efforts of institutions such as the HEART Trust/NTA programme in Jamaica, and the efforts at Metal Industries Company (MIC) in Trinidad and Tobago, VET in the region has lacked the momentum and accumulated expertise and competence of its academic counterpart.

In this paper, I intend to bring VET to the fore in the larger discussion of education transformation in the region, and to suggest that contrary to what has obtained in the pre-Independence decades, this type of education will have to be seen as valid, and that its development

is critical to both social and economic well-being. The discussion leads eventually to a set of ideas that are intended to seed discussion aimed at reconceptualizing the way in which we have thought about and conducted VET. In developing the arguments, the paper is organized along the following lines: (a) VET orthodoxy for developing countries, (b) Changing VET in developed countries, (c) VET in newly industrializing countries (NICs), (d) Towards reconceptualizing VET in the Caribbean, and (e) Conclusion.

VET Orthodoxy for Developing Countries

In the colonial period, the logic was that the spread of academic education should be limited and that, instead, the focus should be on useful education. The Tuskegee model of industrial education, which had proved to be successful among black ex-slaves in the United States (US), was imported into Africa and the Caribbean, with the focus on doing over knowing and reflection. Thus, practical education was consistent on one level with post-slavery racist ideology—with the view that ex-slaves were incapable of academic sophistication. Or, we may argue that such a stance with respect to ex-slaves might have been more consistent with an ideology of power; the fierce sanctions against teaching slaves to read, in all of slavery whether in the Caribbean or in North America, being inconsistent with the espoused view that slaves would not be able to capitalize on access to the means to knowledge. On this latter count, it was rational behaviour on the part of former colonials to be suspicious of VET, noticing which type of education was associated with privilege and power, and to seek out liberal education once not just emancipation but independence was in their grasp.

But in the post-Independence era where countries found themselves needing to go about technological aspects of nation building, such as winning water, building roads, constructing buildings, electrification, keeping factories operational, and maintaining capital stock, deficiencies in technical capability soon became evident, and the need to create critical mass of technically competent people became an imperative. Here dependence crept in, since it is easier and cheaper for countries to start-up academic education than it is to do so with technical education. When countries reached out to multilateral agencies such as the World Bank, they found themselves at the mercy of prevailing Bank ideology. We have seen accounts now where the thinking of the Bank with respect to investment fluctuated over time. From a period in the 1960s and 1970s where there was encouragement to developing countries to invest in diversified curricula, the position of the last three decades has been the reverse. The Bank has frowned on investment in pre-employment formal vocational education.

Urevbu (1988) recounts early colonial attempts to vocationalize curricula in Africa, the failures, and the preference of citizens for academic education, which led to jobs. He cites the Africa conference in Addis Ababa in 1961 when African countries were in unison that investment in school-based vocational education would lead to economic growth. But the 1970s world recession and inflation led to unemployment, and the brittleness of the relationship between training and employment was seen. Urevbu cites two cases, Tanzania and Nigeria, noting that unlike the latter which took a manpower-planning approach to VET the former employed it in the service of an ideology of self-reliance.

Thus, for several decades now, it has been orthodox thinking internationally that investment in VET is not a good thing because it is costly and not as critical to economic development as investment in primary education, or in academic education more generally. This notion was bolstered to a great degree by the conclusions of a very rudimentary study conducted by Phillip Foster in Ghana, based on a questionnaire he gave to adolescents asking them what careers they would like to pursue, and comparing their responses with the availability of jobs in the economy. Foster (1965) pointed out the disjuncture between what the students aspired to be, what they were trained for, and what the job market offered, and proclaimed the "vocational school fallacy." This study, despite its weak design and its failure to take into account the vocational immaturity of adolescents, nevertheless proclaimed that the findings demonstrated the foolhardiness of investing in vocational education in schools. Foster's view was to be supported later by a spate of rate-of-return studies that purportedly

showed VET investments to yield lower returns than academic investments.

In a well-cited article titled "To vocationalize or not to vocationalize? That is the curriculum question," George Psacharopoulos (1987), from his World Bank perch, examined this question with respect to the secondary school curriculum, and contended that general education might be the best vocational education in agricultural economies. Further, he asserted that at the secondary level the costs of vocational education are much higher than that for other forms of education, and that the benefits are comparable. He was convinced then, and so wrote, that vocationalization had failed in both developed and developing economies, and that accordingly the solution is to look on the supply side and to ask where best to provide vocational education, and then to the demand side to see who wants it. VET skills do not have to be produced in schools, rather, formal out-of-school approaches have advantages, including relevance, and the fact that the burden for financing falls on the recipient and not the state. This basic Bank position can be seen echoing through works such as Middleton and Ziderman (1997).

Beyond the Bank, North American academics added to the drumbeat that vocational education was limiting. In a sweeping look at world vocational enrolment trends, Benavot (1983) observed the rise, then decline, of the intensity of the subject. The rise occurred in the early part of the 20th century, he hypothesized, due to the technological revolution, integration of new citizens arising out of immigration, and class-based reasons—capitalists viewing vocational education as a means to fashion loyal and disciplined workers. But in the 1950–1975 period, the vocational share of education declined in every region except Eastern Europe, which he contends was a post-World War II phenomenon. The sharpest decline took place in Africa, notes Benavot, on account of the unavailability of jobs for vocational graduates, due to lack of industrialization and to the negative stigma of the subject. The conclusion was that structural changes in curricula have been due to strong ideological currents—including global egalitarian ideology—countries viewing differentiated curricula as problematic where they want education to serve an incorporation function that could yield a more standardized citizenry.

The ideological aspect of this conclusion seemed more appropriate for the developed countries than the developing ones. Any decline in vocational enrolment in Africa or the Caribbean, for example, would have been strongly influenced by lack of infrastructure to deliver such programmes, and continuing absence of meaningful industrialization, yielding necessary technical jobs.

Echoing the sentiments of the Bank and the findings of Benavot, W. Norton Grubb (1985) observed the increasing power of vocationalism over the whole curriculum, cautioning that the multilateral agencies were spreading untested VET models to less developed countries (LDCs). Grubb contended that vocationalism as a general solution to economic problems is ineffective, and that it was important to distinguish between reforms that are possible through schools and those that require extending beyond schools toward other institutions in the society. But Grubb had made a similar observation with respect to the vocationalization of the curriculum of American community colleges, and the passage of time and the entrenchment of career programmes in these institutions proved him to be wrong.

One difficulty that developing countries encountered as they sought to vocationalize the curriculum through borrowing from multilateral agencies was that local input into programme design was limited, leading to a dependency relationship between donor and borrower. We see this in accounts from Sierra Leone, Jamaica, and Gambia. Powell (2001) draws on case studies of Bank-funded projects in Jamaica and the Gambia, and speaks of the exclusion of local personnel from the projects, the dominance of foreign consultants, and the imposition of foreign models (especially a Canadian entrepreneurial model). The result of this is that locals were forced to frame projects using concepts that they believed increased the funding probability. In doing so, they deferred to external requirements. In the Sierra Leone case, Cream Wright (1988) noted that the Bank's position was that he who pays the piper calls the tune. Thus, even where the Bank had funded VET, the attendant conditionalities suppressed the formation of local expertise in LDCs.

Recently, though, we have seen the phenomenon of former World Bank technocrats reflecting adversely upon the way the Bank conducted its business. Consistent with Trinidad dialect, this is a case of "mouth open, tory jump out." With respect to VET, the account of Bennel and Segerstrom (1998) is instructive. They point out that the World Bank's thinking on VET is that its funding is best left to individuals, firms, and the private sector, with very little government intervention, based on data that private sector initiatives have outperformed public sector ones. They contend that much of this turned on failures in Sub-Saharan Africa in the 1970s and 1980s. According to these authors, *there has not been consensus on this issue at the bank*. Thus, "while some accept the case for fairly extensive government interventions, other staff adopt neo-liberal positions" (p. 272), and they contend that it is the latter who have prevailed. Bennel and Segerstrom assert that pre-employment occupational training (PEOT) can take place in school, college, or workplace and that the Bank "provides very little substantive evidence against public sector college-based PEOT" (p. 280). Drawing on data from Asia and Europe, they suggest that institution-based training has become the dominant training mode for the 16–19 cohort, and that vocational education is a key economic development strategy. Contrary to Benavot (1983), they contend that the vocational secondary share of enrolment is increasing in developing countries, particularly in China and Chile where there has been rapid economic expansion. Accordingly, the World Bank's reluctance to fund VET in the context of an expanding education sector budget is essentially an ideologically driven overreaction, which is not based on evidence. As an illustration, Hawley (2003) shows that vocational schooling in Thailand has yielded consistently higher returns at both secondary and post secondary levels.

One conceptual difficulty that has beset the orthodox thinking with respect to VET, which I have characterized here, is the inability to see the liberal education prospects of the subject. Thus, VET has been cast in opposition to academic education, in a way that suppresses the prospect that the subject could be conceived in liberal ways. Elsewhere, I have examined such a prospect, pointing to conceptions of vocational education that can make it palatable as education for all (see

Lewis, 1997, 1998). Others (e.g., Grubb, 1996; Lum, 2003) have written in this vein. Many developed countries have been adopting an elastic approach to VET, usually through the integration of liberal and vocational education.

Changing VET in Developed Countries

As Bennell and Segerstrom (1998) pointed out, despite prohibitions against VET in developing countries by the World Bank, this form of education has thrived in the *developed* world. We see this in Europe, Australia, and the US, where protracted debates have transpired on ways in which the subject can be transformed, particularly in keeping with perceived increases in the academic content of jobs. Keep (2002) looks at the VET debate in the UK, where two competing models of training are evident—one that favours dealing with the demand for and use of skills *in the workplace*; the other favouring institutional change and increasing the supply of skills. This debate can be seen to be of similar character to that which Bennell and Segerstrom reveals occurred within the World Bank. This question of whether or not there should be an institutional phase of training prior to industry-based training has become the "front-loading" debate. Winch and Clarke (2003) and Hager (2004) explore competing sides of the issues here, with Hager contending that the changing nature of work, especially the increasing content of knowledge or "soft skills," makes *integrating* front loading and apprenticeship a better curricular strategy. As the United Kingdom (UK) strives to fashion a new skill formation strategy, an underpinning theoretically oriented discourse has emerged, aimed at infusing liberal concepts into the subject. We see this in Hyland (1993), who argues for bridging the academic/vocational divide according to principles set forth by philosopher John Dewey. Winch (1998) suggests that vocational education could look rather less instrumental if it proceeds under principles articulated by the German philosopher, Freidrich List—where vocationalism is infused with civic aspects. Tarrant and Tarrant (2004) and Lum (2003) offer equally compelling insight into ways in which vocational education can yield a well-rounded citizen.

Bagnall (2000) reports on Australia's approach to make the transition from school to work

smoother. One approach is that students in the last two years of high school would combine school-based studies with work experience and off-the-job training. Training is industry led, with standards and delivery being relevant to employer needs. He notes that French society is diploma oriented, thus the approach is "flexible specialization," a new kind of worker with competence that can be located between the skilled worker and the technician. Taylor (2005) provides an account of the Canadian case where the rhetoric of corporatism comes up against the reality of market approaches that reinforce the academic-vocational hierarchy. *The challenge is how to produce trained workers while at the same time preparing critical citizens*. The concern is that differentiated programmes encourage differentiated schools, and race and class polarization.

Jarvinen (2001) speaks of vocational secondary schools in Finland that take the approach of integrating academic and vocational education. The curriculum is guided by a set of principles in keeping with global citizenship. "Qualifications" are broadly conceived, and among them are included "motivational qualifications;" "sociocultural qualifications;" "innovative qualifications;" and "political, consumer, technology related qualifications." She reports data showing that, indeed, vocational secondary schools deliver on such qualifications.

Since the middle of the 1980s, vocational education in the US has been vibrant, in that there have been attempts, both through legislation and the advocacy of scholars and adherents, to have it become more liberal in content. New models have emerged out of this ferment. One important such is the Career Academy, which is a thematically focused school revolving around a cluster of related careers in a particular discipline, such as banking or aerospace (e.g., Stern, Dayton, & Raby, 2000). Another is *High Schools That Work*, which offers challenging academic course sequences along with vocational content (Bottoms, 2002). A third is "Tech-prep," which articulates the last two years of high school with the curriculum of two-year technical or community colleges (see especially Parnell, 1985). A student who starts a vocational programme at one level proceeds to the next without loss of coursework and with fluidity. These approaches all include school-to-career transition features (see Hamilton, 1993; Hamilton & Hamilton, 1994; Hamilton & Klaus, 1994).

VET systems in Germany have perennially been viewed as the standard for other countries, whatever their stage of economic development. The Dual System has been copied widely. It is a system in which learning takes place both in vocational schools and through industry apprenticeships. Some three-quarters of 16- to 19-year-old German youth participate; their training ranging from three to five years (see Deissinger, 1996; Idriss, 2002; Raggatt, 1988). Raggatt explains that the term "dual system" has multiple meanings: (a) dual training venues, industry and vocational schools; (b) shared financial responsibilities for training between states and industry; (c) split legal responsibilities; and (d) participants assuming the dual identities of trainees and students. It features a tradition of cooperation between social partners, such as unions and industry, and the German state. There is some concern that the German Dual System may not be well suited to contemporary production methods of the global economy, which are team-based, different from the individualism of craft culture (e.g., Herrigel & Sabel, 1999; Idriss, 2002).

Many developing economies have been attracted to the German approach to vocational education, but typically such countries do not take account of the embedded nature of this system—its history based on trust and social partnership, and the German veneration of craft; certification conferring enobling forms of social identity (see a more general account on the question of cultural borrowing in Lewis, 2007). Failed attempts at trying to emulate the system without its inherent supports have been reported from Korea and elsewhere (e.g., Jeong, 1995; Mayer, 2001).

VET in Newly Industrializing Countries (NICs)

It is instructive that in spite of decades of prohibition regarding investment in VET in developing countries, consistent with Western development scholars and the World Bank, that the newly industrializing countries of Asia in particular had had such investment as critical aspects of their economic transformation strategy.

In their call for re-evaluation of World Bank dogma, Bennell and Segerstrom (1998) had pointed out that China and Chile had invested in VET and that these are countries that had witnessed economic development. In the case of China, even though graduates with pre-employment vocational education were found not to earn more than those with academic education, and were not perceived to be more effective than them by employers, the author (Yang, 1998) cautioned that this could not mean abandoning investment in VET in schools. Rather, he asserted that more appropriate for the situation would be an approach that integrates academic and vocational learning. Yang explained that the findings had much to do with traditional preferences for liberal over vocational learning, both on the part of students and employers.

In Asia, investment in VET is uneven across countries (Tilak, 2002) but there are very good examples of countries (e.g., Singapore, Korea, and Japan) that have relied upon this approach to skill formation to good effect. Indeed, a revival of VET can be seen. A report (UNESCO, 2005) suggests that the resurgence is due to the global economy and new conceptions of the nature of skill. The report calls for a new vision of VET in which practical or life skills are integrated into primary and secondary school offerings. It identifies China and India as examples of countries that are benefiting from investing in skill, and singles out the Republic of Korea as "the shining example of how TVET can fuel stellar economic growth" (p. 6). In support of this assertion, it points out that in the big push toward industrialization, 40% of secondary school students in Korea are enrolled in vocational education. Further, the report indicates that VET is still viewed as second class, but it is conceived now with a strong academic focus to the point where, in some schools, academic and vocational students share 75% of a common curriculum.

Writing in his capacity as Director at the Korea Research Institute for Vocational Education and Training, Kisung Lee (2001) spoke of the need to "renovate" the traditional model of vocational education in keeping with the demands of a knowledge-based society. The Korean Ministry of Education planned to assure the viability of secondary school VET through the following set of actions:

- reorganizing vocational education at the high school level to meet the changes in industrial structure and demands in vocational education
- introducing integrated (comprehensive) high schools
- approving the establishment of specialized high schools
- strengthening the curriculum of basic vocational and general competencies
- strengthening the linkage between vocational high schools, vocational colleges, and four year colleges and universities to enhance work oriented abilities and expand opportunities for continuing education
- strengthening the linkage among vocational colleges, four-year colleges and universities, and industries
- strengthening teacher field training
- supporting the employment of experts in the field as practice teachers
- improving the educational environment at secondary schools
- Ministry of Education emphasized allowing each vocational education institution the flexibility for setting curriculum, reforming of each school's operation systems, flexibility of teacher recruitment… (p. 5)

The Republic of Korea's Ministry of Education's website (http://english.moe.go.kr/main.jsp?idx=020101) shows that the infrastructure of schools includes regular high schools (enrolment 1,224,452), and vocational high schools (enrolment 542,077). Beyond the high school are junior colleges, to which high school graduates may apply. Currently, enrolment here is 550,993. About half of the places are set aside for vocational high school students who are continuing training in the same field, in addition to craftsmen and workers qualifying through national certification or who are meeting special industrial requirements. The curriculum is practical and based on on-site training, school-industry cooperative programmes, and vocational specialized training. Students pursue the National Certificate Examinations.

In Singapore, vocational education begins in secondary schools among students pursuing the

Normal course—one strand of students pursues the Normal Academic course, while another pursues the Normal Technical course. These latter students sit 5–7 General Certificate of Education (GCE) N'level subjects at the end of the fourth year of secondary schooling. They pursue mathematics, English, Basic Mother Tongue, and Computer Applications as compulsory, along with technical studies. This course prepares them for technical and vocational education at the Institute of Technical Education—1- to 2-year courses. Students in the Normal academic course who do not qualify for a fifth year of study may go on to three years of study at polytechnics (http://www.moe.gov.sg/ corporate/eduoverview)

In Taiwan, there are academic high schools and vocational schools for students 15–18 (3 years) that they may attend after junior high. The curriculum includes industry or technology, commerce, and marine products. Study leads to a senior vocational diploma. Students may also attend a 5-year junior college programme that includes the three remaining years of high school plus two years of higher education. Junior colleges prepare students in industry, agriculture, marine studies, pharmacology, and so on. In 2001, the Government considered converting vocational high schools into community colleges. By 2004, 488 vocational schools had been so converted. (Republic of China. Ministry of Education, 2005).

Towards Reconceptualizing VET in the Caribbean

The background provided this far has revealed the unsettled nature of the question of VET in developing economies, but it also indicates that in more recent times there has been considerable rethinking internationally about the role it can play in skill formation. In countries everywhere now, whether developed or newly industrializing, VET is being looked upon with favour. In the Caribbean, we must take a hard look at this and get our house in order. The major hurdle here is in finding ways to think about addressing the supply side of the skill issue in concert with the demand for skill. This does not necessitate manpower planning, but it does mean that the governments of the region have to assume some posture on what kind of skill profile we in the Caribbean must display. In turn, this speaks to what kinds of industries are to be encouraged, and what kinds of conversations are to be held with employers regarding skill quality. The recently published report of the New Commission on the Skills of the American Workforce (2006) sets forth a scenario in which LDCs would be engaged primarily in routine work performed both by people and machines, while in the US, and presumably other countries in the developed world, the work to be engaged in would overwhelmingly be in the creative realm. Is this a satisfactory scenario for the Caribbean? Should we be satisfied with assuming a low-skill equilibrium posture? These are questions for governments, but their resolution must proceed in parallel with that attending supply side provisions.

Beyond the demand side of skill, and the actuality of workplace needs, is the question of VET as a basis of a small-business entrepreneurial class. A large part of the energy of VET, both in the high school and beyond, should be in respect to the teaching of entrepreneurship skills, and the provision of needed institutional support for those who participate in the skill system and wish to convert their competence into business activity.

These notions lead to the following set of imperatives with respect to VET:

- Need to accord VET parity of esteem with academic knowledge
- Need to take a variegated approach to VET at the high school level
- Need to expand post-secondary provision substantially
- Need for a stronger industry role as a site of VET
- Need for curricular flexibility
- Need for innovation
- Need for approaches to assessment that reflect technical as opposed to academic culture
- Need for institutional infrastructure capable of providing the teachers and other requisite technical personnel needed to run vocational programmes successfully
- Need for Caribbean-wide skill qualification standards

- Need for harmonizing the schooling and training systems throughout the Caribbean
- Need for a strong entrepreneurial component in all VET programmes
- Need for the creation of institutional (financial and technical) structures designed to support VET graduates who wish to convert their training into enterprise
- The need for research and evaluation

Each of these imperatives will now be reflected upon in turn.

Need to Accord VET Parity of Esteem With Academic Knowledge

There are valid reasons why we in the Caribbean should prefer academic education over vocational education for our children. Academic education has the power of being both vocational and liberal in its nature and effects, and arguably can offer to children a wider array of career prospects. In advocating vocational education, then, we have to admit to this truth. Thus, in making the case here for parity of esteem, the attempt is not to suggest that academic and vocational education are completely substitutable. Rather, the intent is to suggest that *we should accord VET the same degree of attention in the curriculum as we do academics, and afford those who pursue this type of education the same citizenship courtesies and resource support as we do their academic peers.* There are several implications of this mindset in the context of the high school. First, it requires abandoning the dumping-ground approach to vocational curricula assignment. Second, it means the need to so configure the secondary school vocational curriculum that it shares a considerable percentage of coursework with the academic curriculum. For example, *a vocational student at the secondary level should take the same mathematics, English, and science (among other subjects) as other students.* Beyond these, parity of esteem means in practice that forms of VET should be made part of the curriculum of *all* students. It means also that *teachers of VET should meet comparable qualification or certification standards as academic teachers, that is, they should at least possess bachelor's degrees.*

Need to Take a Variegated Approach to VET at the High School Level

By a variegated approach is meant here the need for diversity within territories and across them in the approach to VET in the high school. As one looks across the world to see what forms VET may take at this level, it becomes apparent that the options are many. They include:

1. Career academies—which are vocationally oriented high schools in which the curriculum is thematically focused around one or more careers. Thus, we could conceive of a high school that is devoted solely to agricultural careers, or marine careers, or sports. A feature of these would be integration of academic and vocational knowledge.

2. Vocational high schools—schools that are devoted to preparation in an array of vocations, but which will have a strong underpinning of academics. Such schools could be on a 2- or 3-year model—Forms 4 and 5; or Forms 3, 4, and 5.

3. Career clusters—an approach that allows students to range over coursework in career areas that are related. For example, a student may pursue a construction careers track in which the preparation ranges over carpentry, masonry, electrical, and plumbing. Similarly, a student may pursue a track in tourism, or fashion designing, or business.

4. Work-based learning—where the curriculum includes work experience activities that are meant to complement school-based activities. For example, a student who is pursuing a web-designer program could spend part of her school week gaining experience in a company that designs websites.

Need to Expand Post-Secondary Provision Substantially

There is need throughout the Caribbean to expand the post-secondary school infrastructure by a significant factor. Whatever we are doing now by way of number of available places needs to be multiplied by a factor of, say, 10. In Trinidad and Tobago, the multiplier should actually be greater. Included here are technical schools and

community colleges. We do not produce nearly enough graduates at this critical middle level. There are implications here for a related set of activities, including the training of vocational teachers, and expansion of vocational offerings in areas not traditionally offered, such as solid modelling.

Need for a Stronger Industry Role as a Site of VET

There is need for a stronger industry role in VET in a number of ways including: (a) providing advice on areas of skill need, (b) providing apprenticeship places, (c) providing scholarships, (d) assisting in certification standards, and (e) as members of vocational curriculum advisory committees.

Need for Curricular Flexibility

There is need in Trinidad and Tobago and in the rest of the Caribbean to adopt a stance of flexibility in vocational offerings. There are many areas that allow for this, including: (a) approach to scheduling of courses, (b) electronic delivery, and (c) week-end and summer offerings.

Need for Innovation

As with flexibility, there should be room for creativity in the way VET is offered. There are as many options here as we are willing to imagine. For example, we could be innovative in the creation of new curricula that would attract interest, such as programmes in boat building, or fishing, or the creation of marine hatcheries.

Need for Approaches to Assessment That Reflect Technical as Opposed to Academic Culture

Drawing on the Trinidad and Tobago experience as example, there clearly is need for approaches to assessment of VET that respond to a technical as opposed to an academic dynamic. This means we should be more prepared to test performance and products, and to incorporate both formative and summative approaches. Our history is that even very practical VET subjects fall victim to

academic assessment and academic norms of what constitute competence. This is a great area of need.

Need for Institutional Infrastructure Capable of Providing the Teachers, and Other Requisite Technical Personnel Needed to Run Vocational Programmes Successfully

It is of great interest to the region that the University of Technology, Jamaica, is in the business of training vocational instructors. This is a monumental step. The region has not typically had the infrastructure capable of this. There is need for some creativity here, such as articulations that bring industry, technical or community colleges, and the universities together to work out particular contributions in the preparation of VET teachers.

Need for Caribbean-Wide Skill Qualification Standards

Already, there exists Caribbean Vocational Qualifications (CVQs) that serve to standardize skill expectations across the region. This is a step in the right direction. Further to this, will be the crucial need to standardize the quality of skill offerings. This means that vocational education programmes throughout the region should be judged by a common metric on the input end. They would be held to minimum expectations in terms of quality of facilities, instructors, curriculum, and instruction.

Need for Harmonizing the Schooling and Training Systems Throughout the Caribbean

There is need within and across countries to harmonize the schooling and training systems. This speaks of the need for articulation structures and clear pathways for students. Students should be able to cross borders easily from one system to the next. They should be able to plot the trajectories in which they have interest and be able to have such trajectories materialize as their experience.

Need for a Strong Entrepreneurial Component in All VET Programmes

One way to empower VET students who graduate with particular skill sets is to provide them with entrepreneurial acumen. There is no tradition of this in VET, but we must now do it.

Need for the Creation of Institutional (Financial and Technical) Structures Designed to Support VET Graduates Who Wish to Convert Their Training Into Enterprise

Consistent with the need for a strong entrepreuneurial component, there is need for the provision of institutional structures that can assist graduates of the VET system should they desire to start businesses based on their specialties.

The Need for Research and Evaluation

There is an overriding need in the region for research and evaluation to become more of a part of education and training. VET initiatives at all levels need to be studied to see if they meet expectations. Tracer studies could be conducted to see whether students benefited (e.g., Bennett, 1979; Lewis, 1985, 1986; Lewis & Richardson, 1984). We have to get to the point where research-based knowledge becomes a critical part of policy making.

Conclusion

The imperatives set forth here are not oblivious to factors that may stand in the way of their realization. It takes two to tango, and the supply side of skill must proceed in concert with a demand side that has the same value system, and that provides a market for educated skill. In the Caribbean, we have to align our conception of skill with ideas that are consistent with the fact of a global economy. Thus, skill has to become a more subtly conceived notion. Skill may connote technical complexity, but it could also reflect autonomy, and the ability to deal with change. Lloyd and Payne (2006) suggest that there is imprecision in the conception of skill, and that one solution to such imprecision is to speak of better quality jobs rather than the more amorphous "high skills." Koike (2002) speaks of the skill-mix

needed on shop floors. Skill in the Caribbean context must be freed from narrowly constricting confines. We must view it in terms of individual empowerment, not merely as employer needs. Accordingly, all VET activities should have as their overarching goal the desire to increase the overall level of competence in the region so that citizens are capable of self-employment and individual countries can keep on a growth path. It is imperative that VET in the Caribbean assume both individual and social dimensions.

References

Bagnall, N. F. (2000). The balance between vocational secondary and general secondary schooling in France and Australia. *Comparative Education*, *36*(4), 459–475.

Bennell, P., & Segerstrom, J. (1998). Vocational education and training in developing countries: Has the World Bank got it right? *International Journal of Educational Development*, *18*(4), 271–287.

Benavot, A. (1983). The rise and decline of vocational education. *Sociology of Education*, *56*(2), 63–76.

Bennett, P. S. (1979). *A comparative analysis between vocational and non-vocational graduates from a selected number of Jamaican new secondary schools*. Unpublished doctoral dissertation, Michigan State University.

Bottoms, G. (2002, April). *Raising the achievement of low-performing students: What high schools can do*. Paper presented at Preparing America's Future: The High School Symposium, Washington DC. Retrieved from www.skillscommission.org/executive.htm

Deissinger, T. (1996). Germany's Vocational Training Act: Its function as an instrument of quality control within a tradition-based vocational training system. *Oxford Review of Education*, *22*(3), 317–336.

Foster, P. J. (1965). The vocational school fallacy in development planning. In C. A. Anderson & M. J. Bowman (Eds.), *Education and economic development* (pp. 142–166). Chicago, IL: Aldine.

Grubb, W. N. (1985). The convergence of educational systems and the role of vocationalism. *Comparative Education Review*, *29*(4), 526–548.

Grubb, W. N. (1996). The new vocationalism: What it is, what it could be. *Phi Delta Kappan*, *77*(8), 535–546.

Hager, P. (2004). Front-loading, workplace learning and skill development. *Educational Philosophy and Theory, 36*(5), 523–534.

Hamilton, S. F. (1993). Prospects for an American-style youth apprenticeship system. *Educational Researcher*, *22*(3), 11–16.

Hamilton, S. F., & Hamilton, M. A. (1994). Schools and workplaces: Partners in the transition. *Theory into Practice*, *33*(4), 242–248.

Hamilton, S. F., & Klaus, H. (1994). The school-to-career transition in Germany and the United States. *Teachers College Record*, *96*(2), 329–344.

Hawley, J. D. (2003). Comparing the payoff to vocational and academic credential in Thailand over time. *International Journal of Educational Development*, *23*(6), 607–625.

Herrigel, G., & Sabel, C. F. (1999). Craft production in crisis: Industrial restructuring in Germany during the 1990s. In P. D. Culpepper & D. Finegold (Eds.), *The German skills machine: Sustaining comparative advantage in a global economy* (pp. 77–114). New York: Berghahn Books.

Hyland, T. (1993). Vocational reconstruction and Dewey's instrumentalism. *Oxford Review of Education*, *19*(1), 89–100.

Idriss, C. M. (2002). Challenge and change in the German vocational system since 1990. *Oxford Review of Education*, *28*(4), 473–490.

Jarvinen, A. (2001). VET under review in Finland: The impact of VET on secondary education. *European Journal of Education*, *36*(1), 55–65.

Jeong, J. (1995). The failure of recent state vocational training policies in Korea from a comparative perspective. *British Journal of Industrial Relations*, *33*(2), 237–252.

Keep, E. (2002). The English vocational education and training policy debate—Fragile 'technologies' or opening the 'black box': Two competing visions of where we go next. *Journal of Education and Work*, *15*(4), 457–479.

Koike, K. (2002). Intellectual skills and competitive strength: Is a radical change necessary? *Journal of Education and Work*, *15*(4), 391–408.

Lee, K. (2001, June). *New direction of Korea's vocational education and training policy*. Paper delivered at the UNESCO Regional Conference, Adelaide, South Australia.

Lewis, T. (1985). *A labour market assessment of on-the-job training—Senior comprehensive school project*. Unpublished research report, National Training Board, Ministry of Education, Trinidad and Tobago.

Lewis, T. (1986). Labour market outcomes of comprehensive education in Trinidad. *Caribbean Journal of Education*, *13*(1-2), 42–67.

Lewis, T. (1997). Towards a liberal vocational education. *Journal of Philosophy of Education, 31*(3), 477–489.

Lewis, T. (1998). Vocational education as general education. *Curriculum Inquiry*, *28*(3), 283-309.

Lewis, T. (2007). The problem of cultural fit—What can we learn from borrowing the German Dual System? *Compare, 37*(4), 463–477..

Lewis, T., & Richardson, R. (1984). *More evidence from the Trinidad and Tobago labour market.* Unpublished research report, National Training Board, Ministry of Education, Trinidad and Tobago.

Lloyd, C., & Payne, J. (2006). Goodbye to all that? A critical re-evaluation of the role of the high performance workplace organization within the UK skills debate. *Work, Employment and Society, 20*(1), 151–165.

Lum, G. (2003). Towards a richer conception of vocational preparation. *Journal of Philosophy of Education*, *37*(1), 1–15.

Mayer, C. (2001). Transfer of concepts and practices of vocational education and training from the center to the peripheries: The case of Germany. *Journal of Education and Work*, *14*(2), 189–208.

Middleton, J., & Ziderman, A. (1997). Overview: World Bank policy research on vocational education and training. *International Journal of Manpower*, *18*(12), 6–28.

New Commission on the Skills of the American Workforce. (2006). *Executive summary: Tough choices or tough times*. Washington, DC: National Center on Education and the Economy.

Parnell, D. (1985). *The neglected majority*. Washington, DC: Community College Press.

Powell, M. (2001). A comparative study of TVET projects – implementation experiences from Jamaica and the Gambia. *International Journal of Educational Development*, *21*(5), 417–431.

Psacharopoulos, G. (1987). To vocationlalize or not to vocationalize? That is the curriculum question. *International Review of Education*, *33*(2), 187–211.

Raggatt, P. (1988). Quality control in the Dual System of West Germany. *Oxford Review of Education*, *14*(2), 163–186.

Republic of China-Taiwan. Ministry of Education. (2005). *White paper on vocational education.* Retrieved from http://english.moe.gov.tw/ct.asp?xItem=247&ctNode=504&mp=1

Stern, D., Dayton, C., & Raby, M. (2000). *Career academies: Building blocks for reconstructing American high schools*. Berkeley, CA: University of California at Berkeley.

Tarrant, I., & Tarrant, J. (2004). Satisfied fools: Using J. S. Mill's notion of utility to analyse the impact of vocationalism in education within a democratic society. *Journal of Philosophy of Education*, *38*(1), 107–120.

Taylor, A. (2005). 'Re-culturing' students and selling futures: School-to-work policy in Ontario. *Journal of Education and Work*, *18*(3), 321–340.

Tilak, J. B. G. (2002). Vocational education and training in Asia. In J. P. Keeves & R. Watanabe, (Eds.), *International Handbook on educational research in the Asia-Pacific region* (pp. 673–686). Netherlands: Kluwer Academic Publishers.

UNESCO. (2005, April–June). Vocational education: The come-back? *Education Today Newsletter, 13*, 4–7. Retrieved from http: //portal.unesco.org/ education/en/ev.php-URL

Urevbu, A. O. (1988). Vocationalizing the secondary school curriculum: The African experience. *International Review of Education*, *34*(2), 258–270.

Winch, C. (1998). Two rival conceptions of vocational education: Adam Smith and Freidrich List. *Oxford Review of Education*, *24*(3), 365–378.

Winch, C., & Clarke, L. (2003). 'Front-loaded' vocational education versus lifelong learning: A critique of current UK government policy. *Oxford Review of Education*, *29*(2), 239–252.

Wright, C. A. H. (1988). Curriculum diversification re-examined – A case study of Sierra Leone. In J. Lauglo & K. Lillis (Eds.), *Vocationalizing education: An international perspective* (pp. 115–136). Oxford , UK: Pergamon Press:.

Yang, J. (1998). General or vocational: The tough choice in the Chinese education policy. *International Journal of Educational Development*, *18*(4), 289–304.

Graduate Studies in Technical and Vocational Education and Training (TVET) in the Caribbean – Whose Responsibility?

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Abstract. The landscape of tertiary level education in the Caribbean has changed significantly during the last decade as a result of the recognition by governments that in order to survive in this ever-changing technological global market, the education system must adjust to facilitate growth and development and strive to satisfy the needs of the economy. The inception of the Caribbean Single Market and Economy (CSME) has challenged the education system to deliver quality personnel to marshal what may now be viewed as non-traditional, high-demand professional education and training. Each Caribbean nation, and indeed CARICOM, must move swiftly to provide an empirical basis on which to develop benchmarks and standards for this emerging economy. During the last three decades, we have witnessed the emergence and maturity of quality assurance agencies in technical and vocational education and training (TVET) internationally. The benefits derived from such agencies are astounding in terms of establishing and maintaining standards. During the last decade, Jamaica established its TVET quality assurance agency, the National Council on Technical and Vocational Education and Training (NCTVET), and has utilized Industry Lead Groups to formulate a significant bank of standards, which are now employed by the various sectors. Establishment of a solid postgraduate programme will provide researchers, and hence valuable information and data to refine and continue development of standards, which will in the long term assist policy makers. This paper will outline the response of The University of the West Indies (UWI) in its attempts to provide leadership in the delivery of graduate programmes in TVET for the Caribbean.

Introduction

According to Design of a Curriculum on Curriculum Development (DCCD) (2004), 60–80% of the workforce worldwide is trained and educated in institutions for technical and vocational education and training (TVET) for the intermediate employment sector. Although the qualifications of skilled workers and technicians are regarded as a key issue for competitiveness of companies and economies all over the world, technical and vocational education at the tertiary level is considered a scarce commodity in the Caribbean and many developing countries worldwide. Despite the call for this type of education by political leaders, industries, commerce, and the public in general, very little has been done to provide access to this education in these countries. At the present time, there are only a handful of institutions in the Caribbean offering technical and vocational education and training at the tertiary level. Among these are the University of Technology, Mico Teachers' College, and the Vocational Training Development Institute (VTDI) located in Jamaica; the Sir Arthur Lewis Community College located in St. Lucia; and the University of Trinidad and Tobago (UTT), located in Trinidad. These institutions experience severe limitations, so that access is limited to only a small fraction of eligible persons desirous of entering these institutions. Table 1 shows the post-secondary TVET programmes offered in tertiary institutions in Jamaica in 2006. To access this type of education, persons in the Caribbean and other developing countries were compelled to journey at tremendous expense to developed countries such as the United States, Canada, Germany, New Zealand, England, and Russia. It is evident that developing countries benefit most from persons equipped with technical and vocational education since skills are necessary for the development of any nation.

As the Caribbean embraces the Caribbean Single Market and Economy (CSME), more demands will be placed on the TVET system since this area of education is considered critical in national and regional development. The need for

personnel who are capable of operating at advanced levels will drastically increase, especially in the areas of standard setting and quality assurance. It is becoming abundantly clear that institutions will have to retool to provide personnel to fill these important positions. The importance of making these provisions cannot be overemphasized, as indicated by the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (2006), which stated that "having a pool of skilled and knowledgeable people within the TVET industry is as important to the TVET industry as it is to the industries TVET serves" (p. 17).

Table 1. Tertiary Level TVET Programmes Offered in Jamaica (2006)

	Diploma	Bachelor's	Master's	Ph.D.
University of Technology, Jamaica	1 (7)	1 (11)	2	0
Vocational Training Development Institute	7 (3)	3	1	0
Mico Teachers' College	1 (6)	0	0	0
The University of the West Indies	0	0	0 (1)	0

Note: Number in parentheses represents courses/specializations

It is evident that sustainable development cannot be achieved based on this limited access. Developing nations will continue to rely on the delivery systems of developed countries to provide personnel to satisfy their demands. It has become necessary for institutions to rethink their policies and reconfigure to accommodate critical developments. One may argue that the local institutions are neither equipped nor prepared to deliver this type of education; however, a modest start must be made in order to achieve significant capacity building. UNESCO suggested that it would be unwise to start with a large number of vocational disciplines, since institutions offering these new programmes will have to develop their own profile and at the same time compete with already established academic disciplines.

Graduate-Level TVET Programmes

Technical and vocational education at the graduate level is aimed at providing a platform for research as well as advanced education and training for technical and vocational educators and administrators. It is anticipated that this education will consolidate technical and vocational disciplines and serve as a catalyst for further developments in the field. Universities and colleges in most developed and some developing countries have recognized the importance of this aspect of education and have made deliberate attempts to provide access to graduate-level education for persons in the field.

At a UNESCO International Meeting on Innovation and Excellence in TVET Teacher/Trainer Education, held in Hangzhou (China) from November 8–10, 2004 (UNESCO-UNEVOC, 2005), participants agreed on standards and a framework curriculum for a university-based master's degree for teachers and lecturers in TVET. The meeting defined 12 vocational disciplines that would facilitate the international exchange of students and lecturers, which was previously impossible because of highly diverse traditions and modes of the education of TVET teachers and trainers. International cooperation in TVET research and development would likewise draw benefits from this UNESCO initiative. According to DCCD (2004), representatives of both developing and developed countries emphasized the importance of the Hangzhou conventions. Developing countries anticipate involving their academic elites in research and development in TVET by initiating relevant master's degree programmes at universities.

To ensure that this does not only happen by chance, some countries have provided funding by way of grants and creative taxation measures for institutions to access resources, primarily to facilitate the implementation of vocational disciplines and the delivery of programmes to support these disciplines. UNESCO (DCCD, 2004) outlined three main reasons for implementing vocational disciplines:

1. Vocational disciplines constitute the framework for subject area oriented research-based development of TVET.

2. Vocational disciplines can form the basis of contents of technical and vocational education and training, which is common to several occupational profiles. This part of subject-related contents can be taught for different occupations.

3. Vocational disciplines are what TVET teachers have to study in order to be able to provide subject-related technical and vocational education and training for a restricted group of occupations.

The reasons put forward by UNESCO embrace three primary areas of focus for postgraduate programmes, namely research, specialization core content, and programme specific courses for various occupations. These areas of focus are congruent with programme offerings by most universities. There is absolutely no reason why UWI, and any other university for that matter, cannot make a start towards the development and delivery of postgraduate TVET programmes. Approaches such as that used in Germany could be utilized to make TVET less complex in terms of delivery, organization, and administration.

According to UNESCO (DCCD, 2004), Germany introduced so-called occupational areas. This wasdone essentially to identify various sets of occupations, for which a particular basic education and training was defined to be identical. Hence, the concept of basic education for the whole occupational field was introduced. This meant that for all occupations of such an occupational field, the first year of the various 3-or 4-year vocational education and training programmes was identical. Curriculum development work had only to be done once for each occupational field, and the implementation of education and training for this year was easier in terms of concepts and equipment for vocational education and training institutions, as well as for industries that participated in TVET. This concept proved quite successful for the occupations that were strictly disciplinary, but was less favourable in more recent times where technological development imposed a much more interdisciplinary shape on the major occupational profiles (DCCD, 2004).

This concept could be adapted for delivery of graduate-level TVET programmes in general. Using this approach, It is evident that organizational and management courses could be delivered to satisfy education and training needs at the tertiary level without compromising quality. Programme efficiency could be enhanced by placing emphasis on entry qualifications to ensure that an acceptable level has been attained in the technical and or vocational field before candidates are accepted into the programme.

Framework for a Graduate TVET Degree Programme

The Hangzhou framework for **TVET Master's** degrees is as follows:

Target group for the master's degree:
The master course is targeted at graduate students in Vocational Education i.e. teachers, trainers, and lecturers.

Name of Degree to be Issued:
Master in Technical and Vocational Education and Training (TVET)

Length of study:
90 to 120 Credits in accordance with national regulations. One (1) credit is equivalent to a workload of 25 to 30 hours (according to the Bologna definition)

The minimum entry requirements:
Degree or equivalent competences to the bachelor level.

Quality Assurance:
It is recommended that a commission be established at the offering institution. This commission will make decisions on issues concerning the study course, especially in terms of the various career pathways and institutional settings in the different countries and of non-formal learning accreditation.

Disciplines:
The Hangzhou conference outlined 12 vocational disciplines for graduate degree programmes, namely:

Business
Administration
Production
Manufacturing
Civil Engineering
Electrical Engineering
Electronic Engineering
Information Technology
Communication Technology
Process Engineering and Energy
Health Care
Social Care

Table 2 provides an outline of 12 vocational disciplines and the areas of specialization in those disciplines.

Table 2. TVET Vocational Disciplines and Areas of Specialization

Vocational Disciplines	Areas of Specialization
Education and Culture	Child and youth care
	Nursing education
	Adult education
	Special needs target groups
	Music and dance
Leisure, Travel and Tourism	Travel
	Sports
	Tourist services
	Catering and hospitality
Agriculture, Food and Nutrition	Agriculture
	Food production
	Domestic economy
Media and Information	Printing
	Electronic-advertising
	Electronic-customer-service
	Sales promotion
Textile and Design	Clothing production
	Fashion
	Interior design
	Art and craft
Mining and Natural Resources	Mining
	Oil and natural gas
	Frame curriculum

Studies of Education, TVET and Vocational Disciplines: 39 credits

Three of the modules have to be concluded with a written assignment, which will be assessed according to defined criteria. One out of the Modules 2, 3, or 4 will be realized in project form and concluded with a

project report. In each unit, the student either has to write and present a paper or to participate in a written assessment.

Foundation studies

Module 1

Foundations, theories and structures of education, TVET and HRD	**12 Credits**
M1-01 Foundations and theories of education, TVET and HRD	3
M1-02 Institutional and technical pre-requisites of TVET and HRD	3
M1-03 TVET and HRD in a historical and cross-cultural perspective	
M1-04 Learning in work-processes and working in learning-processes	3

Module 2

Shaping TVET connected to the vocational discipline	**9 Credits**
M2-01 Development and evaluation of vocational curricula, media and learning environments	3
M2-02 TVET in theory and practice: Foundations of vocational teaching and learning, innovation, development and organisation of learning-processes	3
M2-03 Human development, learning and education in the framework of initial education and lifelong learning within its societal context	3

Advanced Studies

Module 3

Teaching and learning in exemplary fields of practice	**9 Credits**
M3-01 Application of methods and techniques of educational and vocational research and development	3
M3-02 Teaching, coaching and moderation of learning in career education and workforce development. Assessment and analysis of individual learning styles	3
M3-03 Development and application of media and learning environments	3

Module 4

Management and evaluation of TVET and workforce development	**9 Credits**

M4-01	Evaluation, measurement and exploration of educational supply and demands	3
M4-02	HRD and organisational development in TVET and workforce Development	3
M4-03	Planning and development of programmes and courses - Methods of exploring work-process-knowledge	3

Studies of the vocational discipline and its didactics: **18 credits**

Foundation studies

Module 5

Vocational Discipline I   **6 Credits**

M5-01	Introduction to the vocational discipline, history of the vocational field, standards and qualifications	3
M5-02	Occupational analysis and Curriculum development	3

Advanced studies

Module 6

Vocational Didactics in the Discipline I   **12 Credits**

M6-01	Hands on planning, realisation and assessment of a teaching unit in the occupational discipline, application of discipline specific methods, media, and practical sessions	9
M6-02	Learning in work-processes, occupational and work process studies and curriculum development	3

Further studies: **36 Credits**

Module 7:

Area of specialization in vocational discipline (working with specific research and development methodologies related to vocational disciplines   18

Graduate-Level TVET Education in the Caribbean

Graduate-level TVET education in the Caribbean is almost non-existent. Even though vocational disciplines are of such great importance to society, decision makers are often reluctant to implement many of these programmes because many of them are not regarded as programmes that lead to full academic disciplines, even in countries where they have existed for a long time. According to UNESCO (2004), the academic communities fear to damage their high status if too many—in their eyes "low quality"—subjects exist at their universities. Furthermore, more traditional academic subjects, for example, physics,

aeronautics, material sciences, and so on, give more prestige and usually more money to the institutions. They suggested that it might be wise not to start with too many vocational disciplines, which will have to build up their own profile while simultaneously competing with already established academic disciplines.

During the last decade, some countries introduced TVET subjects at their universities. Among these are: China, Malaysia, Indonesia, Malawi, and Jamaica. They already partially existed in German-speaking and Scandinavian countries. Other international initiatives include the Commonwealth of Learning (COL) partnership with local organizations, to establish and support the Commonwealth Educational Media Centre for Asia (CEMCA). The COL initiative has also strengthened the Pacific TVET network in association with The Open Polytechnic of New Zealand (Commonwealth of Nations, n.d.). This network organizes and coordinates educational and training programmes in the technical/vocational area, including the training of technical/vocational teachers. The Hangzhou declaration of 2004 also emphasized this point and suggested implementation of more TVET subjects in more universities.

The University of Technology (UTech), Jamaica, is perhaps the most aggressive institution in forging development of graduate programmes in technical and vocational education in the Caribbean region. Through the School of Technical and Vocational Education, the Faculty of Liberal Studies and Education at UTech has partnered with the Southern Illinois University to develop a master's degree in Workforce Development, which is a culmination of a memorandum of understanding developed and implemented in 1982 by Halden Morris. The Northern Caribbean University, UTT, and, indeed, UWI have taken some initiative to chart the path for graduate programmes in technical and vocational education, but this casual approach to the development of programmes and provision of access to graduate programmes in TVET will not meet the demands of this developing region.

Research in TVET

The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (2005) outlined the importance of research in TVET. It pointed out that at the very centre of quality technical and vocational education and training is an effective interaction between teacher/trainer and learners. Indeed, an overall improvement in vocational skills for employability and citizenship can only be realized if there is an improvement in the quality, effectiveness, and relevance of teaching. This, UNESCO-UNEVOC claims, can best be realized through rigorous research. Many persons, both in developed and developing countries, are increasing the emphasis they place on improving the capacity of TVET systems, in recognition of the important role TVET plays in equipping individuals with relevant skills and knowledge. TVET can also better enable individuals to participate in social, economic, and technological innovation processes. Therefore, embedding TVET into regional and national innovation structures is of crucial importance to the economic performance and social development of countries.

Governments in the Caribbean, and developing nations in general, have been calling for data to be used as the basis for making decisions in most sectors. Graduate-level TVET education will provide a solid base for research in the field and, hence, the necessary data. Worldwide, approximately two-thirds of the workforce perform jobs that require a skill level that is usually associated with vocational education and training. Considering that workforce development is one key issue for a country's overall development, it is necessary that the best brains—which usually gather in academic communities—carry out research and provide empirical data for use in the decision-making process. There are only a few countries in the world where such "vocational disciplines" are implemented at universities.

UWI's TVET Graduate Degree

A graduate-level TVET education programme at UWI should aim at building on the undergraduate programmes delivered by the other tertiary institutions in the region, and perhaps from elsewhere in the world. The programme offering should be multidisciplinary and focus on professional development in the field. The degree being proposed is a Master of Science in Technical

and Vocational Education and Training (M.Sc. TVET)

This master's degree in TVET is based on a commitment by the Institute of Education, UWI to the progressive development of education in the Caribbean. Since TVET is considered a major component in sustainable economic and social development of any nation, it is important for the university to make a contribution in this area. The success of this programme will be accomplished through informed engagement with TVET educational theory, policy, and practice. This degree will take the form of a Lifelong Learning Model (LLM). Lifelong learning is increasingly becoming a feature of the educational landscape, and is becoming the day-to-day responsibility for professionals across all sectors of the economy; for those working in education and training in schools, colleges, universities, and training organizations; for those working in training departments of industries and commercial enterprises; and for those working with disadvantaged sections in the population and socially excluded groups.

The School of Education, UWI , Mona, and the Institute of Education in particular, having worked for more than 40 years with teachers' colleges and other tertiary level institutions, considers itself best suited to engage learners at this level, thereby bringing to the fore a new and progressive cadre of committed TVET planners and educators. The Institute of Education, UWI, having implemented a successful online course delivery system, should utilize to its fullest the experience and expertise of international professionals in TVET education, in planning, developing, and reviewing the programme in order to ensure that it adequately reflects the educational needs of its clients and the social, cultural, and political context in which they work.

Career/Employment Opportunities

Graduates of TVET programmes in general are currently in great demand. Increasingly, the need for persons with tertiary level training in TVET is becoming critical. Persons with this qualification will satisfy positions in organizations that develop and implement technical and vocational education programmes for institutions across the Caribbean, and Jamaica in particular. Industrial organizations

that develop and offer their own technical and vocational programmes would also benefit from these persons. In general, organizations that cater for lifelong learning such as universities, teachers colleges, community colleges, business and industry, community service agencies, military services, and governmental bodies will benefit enormously from this programme.

A master's in TVET would help prepare personnel for numerous fields across the Caribbean. Possible career opportunities are:

- **Tertiary Level TVET Educators** – All tertiary level institutions that offer technical and vocational programmes will require a cadre of highly trained educators to develop and implement their programmes.

- **Ministry of Education TVET Officers** – A critical need for policy, curriculum, monitoring, and evaluation officers is evident in most Caribbean countries.

- **Industry Training Officers** – There is a continuous call from industries for training officers who are capable of developing and implementing programmes to meet the demands of the industrial sector.

- **TVET Quality Control Officers** – National training agencies across the Caribbean will require highly trained officers.

- **Community-Based Training Personnel** – Organizations in communities may require persons to develop and implement programmes.

- **Continuing Higher Education** – Faculty working with non-traditional students in continuing education and community colleges.

- **Continuing Professional Education** – Technology-related professional organizations may require their members to access programmes for them to maintain their membership. Persons with this qualification could offer these technocrats the required training.

- **Distance Education** – Faculty at all levels of higher education, teachers, training organizations, instructional designers, and administrative and management personnel at government and international agencies.

- **General Training** – Trainers, human resource developers, entrepreneurs who work in the private and public sectors, instructional designers.

Candidates

Persons accepted to pursue this degree should be experts in their respective fields, hence an M.Sc. degree. Candidates should possess no less than a B+ bachelor's degree and potential to conduct research in the field of technical and vocational education and training.

Proposed Programme

In achieving its objectives, the programme will provide the means whereby all students can acquire and demonstrate substantial understanding of and competence in the various content areas. To this end the programme seeks to:

1. Provide a curriculum that caters to principles of research-led teaching and critical inquiry into the development of technical and vocational education.

2. Expose students to technical and vocational education theories, principles, and policies.

3. Encourage self-directed learning, collaborative learning, and reflective practice, and the development of a learning culture among students that would assist them in acting critically and competently in a variety of educational contexts.

4. Provide students with the opportunity to engage in high-quality, rigorous, scholarly research, which will enable them to acquire a good understanding of TVET and of the cultural, political, and historical contexts in which it occurs.

5. Prepare students to engage in the continuous development of TVET in the Caribbean as practitioners/trainers.

Programme Structure

The masters of science in TVET will embrace 42 credits as follows:

Core courses	27 credits
Elective courses	6 credits
Professional seminars	3 credits
Research Paper	6 credits

To be awarded this degree from UWI, candidates must successfully complete all courses and the research paper to gain a total of 42 credits over a period not exceeding **four (4)** years.

Course of Study

Candidates must pursue a course of study comprising 42 credits. **Note**: **All courses are designed for completion in 12 weeks.**

Core Courses (9 Courses /27 Credits)

- Occupational Analysis & TVET Curriculum Development
- Management of TVET Programmes (ED63G)
- Facilities & Support Systems for TVET
- Evaluation of TVET Programmes
- Formulation and Implementation of TVET Policy
- History and Philosophy of TVET
- Technology in Education for TVET (ED69C)
- Research and Development in TVET
- Human Resource Development in TVET

Elective Courses (9 Credits)

*Students are required to choose **three (3)** elective courses from the following:*

- Technical & Vocational Clientele
- Testing & Measurement in TVET
- Instructional Systems Design (ED67M)
- Introduction to Distance Education

Professional Seminars (3 Credits)

- Issues and trends in Technical & Vocational Education
- Quality control in TVET
- Professional development in TVET

Research Paper (3 Credits)

- Special focus on aspects of TVET

Candidates may apply a maximum of 15 credits obtained from other institutions towards UWI's M.Sc. TVET; however, these credits must be approved before starting the programme. The thesis and 75% of the core courses must be completed at UWI.

Conclusion

Our current social context points to the need for a cadre of educators capable of addressing the complex issues related to globalization, the CSME, national TVET policy development, economic growth, and adult education for development, including mobilization, participation, and empowerment of individuals in creating civic societies.

TVET is increasingly being dubbed as a primary feature of the economic stability of developing nations. It is evident that professionals across all sectors of the economy; those working in education and training in schools, colleges, universities, training organizations; those working with voluntary organizations, trade unions, and community groups; and those working with disadvantaged sections in the population and socially excluded groups are increasingly becoming aware of the importance of TVET education.

UWI should not and cannot sit complacently and wait for development to happen. It is evident that this institution, having a regional reach, is an entity that will be held responsible for the development and delivery of graduate programmes in this field. A master of science in TVET will give prospective and existing practitioners a conceptual and practical understanding of TVET education within the education system. The programme recognizes that much TVET education takes place in non-institutional settings, with adults whose experience of compulsory education may not have been positive. It will give participants the confidence to become reflective practitioners with the necessary teaching and facilitating skills to enable adults to learn in a variety of settings, including work with educationally disadvantaged adults.

A programme of this nature embodies the importance of critical inquiry and field research of a participatory nature. It provides students with enhanced concepts and competencies in designing, implementing, and evaluating TVET programmes for a variety of public and private educational settings. Additionally, this programme will provide students with an understanding of how educational, social, political, and economic systems interface with communities. It seeks to develop individuals who are capable of delivering world class TVET programmes.

References

Commonwealth of Nations. (n.d.). *Commonwealth of Learning: Programmes and initiatives.* Retrieved May 10, 2007, from http://www.commonwealth-of-nations.org/article.php?&id=32&subsection=24&page=2

Design of a Curriculum on Curriculum Development (DCCD). (2004). *UNESCO-UNEVOC Seminar in Hangzhou.* Retrieved May 10, 2007, from http://www.itb.uni-bremen.de/dccd/index.php?name=News&file=article&sid=3&theme=Printer

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. (2005). *UNESCO International Meeting on Inovation and Excellence in TVET Teacher/Trainer Educator, Hangzhou, China, 8–10 November, 2004: Final report.* Bonn, Germany: Author. Retrieved May 15, 2007, from http://www.unevoc.net/fileadmin/user_upload/pubs/Hangzhou-MeetingReport.pdf

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. (2006). *UNESCO-UNEVOC in action: Report on activities, 2004–2005.* Bonn, Germany: Author. Retrieved May 15, 2007, from http://unesdoc.unesco.org/images/0014/001493/149333e.pd

Building Creative Capacity for the 21st Century: Implications for Caribbean Education of the UNESCO World Conference on Arts Education and the CCFA Conference on Societies in Crisis

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Abstract. This presentation comments on emerging themes of the World Conference on Arts Education 2006.

What struck me most about the World Conference on Arts Education in Portugal in 2006 was the emerging theme of "Arts to save the world." What also struck me was the overpowering cry for integrated arts education and the necessity to make the arts the focal point in education, as well as to revolutionize the philosophy of education worldwide; to build partnerships, linkages, and collaborations; and to spread the advocacy for the arts to the unconverted. These themes were reinforced by the call for multicultural education and the emphasis on nurturing creativity.

Koïchiro Matsuura, Director-General of UNESCO, made the observation in his opening remarks that there is a growing disconnect between cognitive processing and emotional processing. The arts help to reconnect the two processes to nurture the development of a society with sound moral behaviour. Matsuura went on to observe that the world is in a state of crisis in education and societies are in crisis; these proved to be recurring assertions from many speakers. Matsuura also affirmed that the arts function as a means of processing the trauma of living in a modern world, a world with inequity in wealth distribution, terrorism, natural disasters, drug abuse and drug lords, gang warfare, intense urbanization, technology, cultural shifts, population aging, and global warming.

The education system must confront the dilemmas of the world today, and the arts and artists could inform the means by which education can provide the problem-solving thinkers

desperately needed worldwide. Our society is in crisis, as the Second Caribbean International Symposium on Arts Education, (held at The University of the West Indies, St. Augustine, Trinidad in June 2005) speculated, and our society needs the arts in the education system now more than ever.

The keynote speaker, Sir Ken Robinson, highlighted the challenge of sustaining the world and not depleting its resources, as well as the challenge of living together on this planet. The future demands that the world's citizens understand these challenges. This future world demands that the creativity of its inhabitants be the key element; in fact, Robinson pointed to a shift from an industrial economy to a creative economy where the demand for creative minds will hold real currency. He pointed to the three main purposes of education: a cultural purpose that values identity and promotes mutual understanding; an economic purpose to ensure sustainability; and an individual purpose for personal growth in capabilities, confidence, and creativity.

The definition of creativity proved to be enlightening. Creativity was defined by Robinson as "applied imagination," a function of intelligence and not separate and distinct from intelligence. He first asked the audience to rate their own estimation of their intelligence on a scale from 1 to 10, and then to rate their estimation of their creativity on a scale from 1 to 10. I would suggest that most of us would have scored our intelligence and creativity differently. We perceive

them to be separate and different. It is common to hear intelligent individuals say that they are not creative. In fact, once we can produce a product out of our intelligence or imagination we can be creative. This aligns directly to Gardner's (1999) definition of intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (Gardner, 1999, pp. 33–34). Schools should teach how to realize cultural products—how to actualize imagination. I would suggest that this should be the fundamental objective of a reconceptualized agenda for education in the Caribbean.

Robinson also alluded to the shift from an industrial education to a new paradigm in education. The industrial education was front-loading, subject-segmented, and hierarchical, and promoted conformity, division of labour, and linearity like a factory line. The new paradigm, however, promotes lifelong learning, disciplines rather than subjects, balance, interdisciplinary collaboration, diversity, and creativity. Always, that element of creativity—that applied imagination—surfaced as a key dynamic on which the future depends.

It strikes me powerfully that our work at the Centre for Creative and Festival Arts must reassert its role as a purveyor of all that is creative; that the disciplines be taught in creative ways; that performance be assessed in authentic ways; and that modes of thinking, problem solving, and initiative be encouraged. By extension, it seems critical that these should also be the aims of education in the Caribbean. If so, it is high time that educators demand that the arts become central to schooling and that education practice be more informed about and informed by arts practice.

Reference

Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.

Part 5: Measurement and Evaluation

Managing Subjectivity in Arts Assessments

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Abstract. Transparency in the award of scores is a major concern in arts assessments. Subjectivity impacts on assessment of the arts due in the main to disagreements about the artistic skills and aesthetic dimensions of artistic works. This paper describes some of the dilemmas facing judges across the artistic domains, and identifies questions that can guide the assessment of creativity. Rubrics are discussed as a method of reducing the impact of subjectivity in arts assessments.

Introduction

Audience responses to the products of visual and performing artists can range from disgust and disbelief to transformation and exhilaration. One does not have to be schooled in dance, music, art, or drama to respond with differing levels of appreciation to the varied formats of artistic presentations. This quality of the arts to evoke responses and create an aesthetic experience (Pugh & Pugh, 1998; Richardson & Atterbury, 2001) often leads laypersons to believe that they have earned the right to engage in critique. Artists would concur that all responses to their work are valid, because individual interpretation and experience contribute to the aesthetic qualities attributed to their work. Artists would also explain that artistic products evolve from conceptualization, acquisition and honing of skills, and creativity, each of which contribute to subjectivity, which is accepted as an inextricable component of artistic assessment. The major issue with measurement in the arts, in educational settings, is the challenge of reducing the impact of subjectivity in assessment.

In this paper, I will discuss some of the subjective factors that emerge in performance measurement, with examples from the arts. Suggestions will be proffered about the use of rubrics to manage subjectivity. The issues of professional judgement, aesthetic understanding, and creativity will be briefly examined. General educators and measurement personnel understand that students learn "something" in arts programmes, but question whether what is learned can actually be measured. My intention is to contribute to changing the perception that arts assessments will always be "unfair and elitist" (Oreck, Owen, & Baum 2003, p. 64).

Ideas in the Literature

Art, Dance, Drama, and Music

There are cultural and stylistic differences across the four domains of art, dance, drama, and music, which are illustrated in the following descriptions. Drama is concerned with the experience of the learner, while, in theatre, the focus is on communication with an audience (Bailin, 1993). "In the case of dance since its medium is the human body … creation is very different from that of making a work of art out of clay" (Sparshott, as cited in Cohen, 1997, p. 51). Music composers make decisions about the organization of sounds as they attempt to share feelings and engage listeners to respond with feelings of their own in an aesthetic experience (Richardson & Atterbury, 2001). The visual arts include art making, art history, criticism, and aesthetics. Lavender (2003) suggested that students "need to gain a solid grounding in aesthetic fundamentals … to become adept and well-informed makers of art and/or design" (p. 41). These descriptions suggest that if arts assessments are based solely on skill, they would not embrace the creativity and ingenious demonstrations, which are possible, valid, and very different in each of the four disciplines.

Artistic and Aesthetic

The varied descriptions of the cultural and stylistic differences across the arts suggest that unless judges have the same understanding of the artistic, not aesthetic, criteria, subjectivity cannot be extricated from arts assessments. McFee (2005) supported the view that artistic judgements have as their basis the history and traditions of art making and rules (cognitive elements) for appreciating the art form. Thus, "any artwork will only be appropriately perceived if located in its category" (p. 370). He believed that any account of an artistic experience will have an intentional connection to previous works, based on the cognitive elements of the work, and there will also be some human value attributed to it. This human value is the aesthetic judgement. According to McFee, the human value constitutes the interest in the work "other than the artistic interest" (p. 383). These aesthetic judgements are based on aesthetic experiences, which are catalysts for the awakening of emotions in audience members.

Matthews (2001) contended that "all art is made intentionally in a human context and nature is not" (p. 395). By this she indicated that there is a purpose (not functional) to all artworks which makes artists' intentions more that representational. She explained that "works of art have an inner life that distinguishes which properties are properly appreciated" (p. 397), thus artists by their choice of aesthetic goals can lead audiences to have particular images and thoughts and still maintain fidelity to their genre. Trained persons would be able to compare the characteristic features of similar works to comment on the artistic worth in newer presentations. Matthews further commented that, in nature, objects are pleasing because they are considered beautiful, but that artists may choose to represent what is ugly in reality, yet be applauded for the brilliance of the representation. An untrained audience would respond differently to aesthetic qualities because "works of art are meaningful: they can embody or express intentions, emotions, ideas and values" (p. 404). The identification, appreciation, and understanding of the aesthetic qualities in artistic work are dependent on personal experiences.

Performance Assessment, the Arts and Subjectivity

Arts assessments in educational settings are confounded by differences such as students' prior instruction, cultural background, language ability, testing conditions, students' moods and motivations, practice efforts, reactions to stress, relationships among peers, relationships between faculty and students, and training and experience of faculty and external assessors (Oreck et al., 2003). The main reason that subjectivity affects arts assessments is the lack of agreement about content and style in the four disciplines. The training of arts educators can therefore narrow their view about suitable curricula, assessment criteria, and assessments themselves. As stated by Lavender (2003), "Legacies from traditions of art education combined with instructors' own art training, colour how the artists/teachers view their role in their students' educational process" (p. 43). Arts educators have an obligation, therefore, to prepare their students for subjective evaluations by engaging them in a variety of performance assessment activities.

Performance assessment entails a "variety of tasks and situations in which students are given opportunities to demonstrate their understanding and to thoughtfully apply their knowledge, skills and habits of mind in a variety of contexts" (Marzano, Pickering, & McTighe, 1994, p. 13). Speck (1998) suggested that if improved performance is the goal of assessment, the process of grading cannot be separated from the grade itself. Mehrens, Popham, and Ryan (1998) offered six guidelines to assist educators with the preparation of students for performance assessment. These guidelines will form the basis for my discussion as I identify the subjective factors in arts assessments.

Readiness for the task. Teachers must ensure that students have the ability to perform the assigned tasks though they may not have previously completed the exact task (Mehrens et al., 1998). Students should be trained to use their intellectual capacity to draw upon the skills needed to perform assigned tasks. In arts assessments, students are usually assigned specific tasks, which are characteristic of the domain. Examples include drama improvisation, a dance

sequence, the production of a 3D relief in the round, or the composition of eight bars of a melody in an assigned key, each of which could be based on a particular theme or commonly used phrase. Unlike other academic subjects where there is one correct answer, multiple interpretations are expected in arts assessment. Ricoeur (as cited in Prendergast, 2004) defined interpretation as following the pattern of thought opened up by the theme or text. Thus, students' ability to follow a pattern of thought is dependent on how they have been taught to think (Byrne, 2003; Prendergast, 2004; Soep 2005). If the assessors have differing standards and understanding of the criteria as a group, and that understanding is different from the teachers, then students will be at a disadvantage during the assessment process. Lack of understanding or agreement about the criteria and expected standards are major contributors to subjective evaluations.

Preparation for the task. It is inappropriate to spend more instructional time in preparation for one task over another, as this may cause an overemphasis on the importance of one skill in the skill set being tested (Mehrens et al., 1998). Teachers are cautioned against teaching set responses to tasks, as students may be able to master those specific tasks but still not be able to transfer those skills to solve problems when faced with unfamiliar contexts. In arts assessment, even though multiple responses are expected, students may still learn a particular dance routine or memorize a soliloquy. Again, the uniqueness of the arts is highlighted, as memorization alone does not guarantee a successful performance. Artists make decisions each second as they engage simultaneously in performance and reflection. Even the artist adjusts his brush strokes and choice of colour as he works to complete his work. This type of problem solving is not usually evident in finished work, as would the rough work on a mathematics examination script. In high-stakes examinations, the process is documented to assist assessors as they grade completed artistic work. Assessors must cope with the dilemma of making cognitive links between students' choices based on the assessment criteria and their own implicit criteria developed based on their training. Personal

experience and training contribute to subjective assessments in the arts.

Clarifying performance expectations. Examinees must not be surprised by the assessment format and acceptable responses (Mehrens et al., 1998). Mehrens et al. urged teachers to ensure that the demonstration of any supplementary skills apart from "the focal constructs" (p. 20) should not negatively affect the assessment of students' competence in the examination areas. These supplementary skills may include making a suitable folder for a subject portfolio or construction of a predetermined set of objects for a math or science project, and can be described as busy work, which does not demonstrate student understanding of the constructs being tested.

While artistic products can be easily identified (a play, dance routine, sculpture, painting, melody), there are an infinite number of ways in which they can be presented. Audience members can attest to this as they describe two actors performing the same role in a play, or dancers performing the same routine side by side, or discuss ceramic pieces by craft students who were given similar guidelines, or two singers' delivery of the same song. In the artistic realm, supplementary skills would be the problem-solving skills that artists use to authenticate their products. Art assessors face a second dilemma that contributes to subjective assessment. They are required to evaluate different products while employing the same assessment criteria. They must rate artists' technical competence as well as the aesthetic appeal, while applying their own implicit standards of the criteria.

Establishing the assessment criteria. Teachers should "identify evaluative criteria in advance of instructional planning and communicate these to students" (Mehrens et al, 1998, p. 20). Teachers are encouraged to build rubrics and describe levels of performance across the criteria. It is this description of levels of performance that has caused arts assessments to be viewed as suspect because of a perceived unwillingness among experts to make standards public. However, there have been standard assessment criteria associated with each of the art disciplines. These include but are not limited to craftsmanship, balance, and

texture in art and design; sensory awareness, projection, and characterization in theatre arts; rhythm, melodic interpretation, and tone in music; and body awareness, vocabulary, and rhythmic awareness in dance. Understanding the criteria helps students to develop their own skills as well as the skill of critiquing because "young artists develop strategies and habits for judging the quality of their work and that of their peers" (Soep, p. 62). The third dilemma for arts assessors is how to employ professional judgement to give a holistic view of the performance, while also assessing the presentation using each of the criteria. This is a measurement concern, because presenters may be penalized or over-compensated based on judges' assessment in one of the criteria.

Consider this response from a judge who assessed a dance performance. The dancer wore a brightly coloured blue scarf over a black leotard for a routine entitled *Volcanoes*. The judge wrote "Wrong choice of color." The comment is an indication that the judge was distracted by the colour of the costume and did not pay as much attention to the vocabulary of movements or the dancer's execution. If such a comment was followed by low marks in all criteria, then this would be an example of being penalized more than once. If the comment was instead "Excellent costuming" and there were near perfect scores in all categories, then the judge would be giving credit for the same thing more than once. This type of distraction contributes to the subjectivity in the assessment process.

Transferability of the skills. Students should be able to employ their skills with unfamiliar tasks (Mehrens et al., 1998). This is not new territory for arts assessment. Drama students have to research their roles to understand what is required of them for portrayals in different contexts. Research is also necessary for the exploration of different genres in dance, music, art, and design. The ability to solve problems is directly related to the ability to transfer skills to complete an unfamiliar task. In the arts, this problem-solving ability is one aspect of creativity. Judges' training and experience help them to interpret the artistic endeavour, and the subjectivity will come from the decisions they make about the success of creative efforts. According to Prendergast (2004), interpretation in performance can be considered "an active process

which involves the shared presence of the spectator in interpreting meaning as the act of the performance" (p. 45). Judges call upon their professional judgement to determine the success of the examinees' creative efforts, and this adds to the subjectivity of the assessment process.

Self-evaluation. This is encouraged so that students can better understand the criteria that will be used to assess their work and also to increase their mastery of the skills under examination (Mehrens et al., 1998). Students in the arts are taught to reflect on their performances using relevant criteria. "Frequent and meaningful self-assessment opportunities embedded within the production process enrich students' creative products and their learning experiences" (Soep, 2005, p. 39). However, interpretation of the criteria remains the biggest issue with regard to fairness of assessment even if criteria are publicized. This ability to reflect on performances leads to the development of professional judgement, and with it an ideological response as well as a sensory response to artistic works. This separates judges from regular audience members.

Professional Judgement

For the interpretation of highly complex objects like pieces of writing, oral presentations, long-term projects, portfolios, or musical performances, while professional judgements are important they can appear to be unreliable (Speck, 1998). This unreliability arises because it is possible for the same judge to rate the same product differently in different contexts and at different times (intra-rater reliability), and it is also possible for multiple judges to assign different ratings to the same performance or product (inter-rater reliability) even when they are viewing the performance simultaneously. Speck (1998) suggested that to criticize subjectivity is to undercut professional judgement itself, and to recommend its replacement by a reliability test is to devalue its importance. He believed that professional judgement facilitates an infinite number of permutations for the application of concepts when there are no clear-cut right or wrong answers. He proposed that teaching students how to apply professional judgement would lead to reducing the mystery that surrounds grading. In the arts,

especially, students must be taught to "use insights from critique to make further adjustments to the specific project under discussion, to reject the suggested changes or to apply new ideas to their future efforts" (Soep, 2005, p.40).

Rubrics: Pitfalls in Design and Employment

The process of making artistic expression answerable to cognition can be achieved with the use of rubrics. Well-designed rubrics will describe a continuum of performance levels and assist students to engage in critique of their own skills, while also increasing their knowledge and assessing their personal growth (Arter & McTighe, 2001; Goodrich Andrade, 2000; Lindström, 2006). Rubrics also make judges more accountable for their decisions. If correctly employed, rubrics can reduce the impact of subjectivity in the assessment process (Stemler, 2004).

There are some common pitfalls in the design and employment of rubrics, which increase rather than reduce ambiguity in the assessment process. Some of these pitfalls include the use of imprecise definitions of criteria; low quality in the sample used for the training of assessors; assessors' preferences (Rudner, 1992); and environmental factors in the assessment context (Oreck et al., 2003; Rudner, 1992). Effective scoring rubrics will include: appropriate scales to measure the levels of mastery of the evaluative criteria; descriptors that provide immediate feedback; and an appropriate range of scores to reflect the importance of the skill as well as the difficulty of the task. Rubrics should be customized for each assessment context (Lindström, 2006), and new users will experience a learning curve, regardless of their level of expertise with the content.

Research is important in rubric development to increase the validity of constructs being measured, and to match the demonstration of knowledge with the appropriate and relevant tasks. Lindström (2006) suggested that the criteria be broken down into two categories: product and process. Product criteria would identify the intention behind the work, the use of the elements, and principles and the appropriate craftsmanship. The process criteria would include investigative work, inventiveness, use of models, and the capacity for self-assessment. The main understanding is that a rubric is more than a checklist.

Practical Suggestions for Rubric Implementation

A training activity is suggested to understand the group being tested. Depending on the size of the class, a teacher may choose a sample of students (at least two) from each ability range and engage in a pre-marking exercise. This will give some indication of students' interpretation of the criteria. Teachers can also ask their peers to assess the same sample and then discuss why certain scores were awarded. This would help teachers to identify their own biases and recognize the gaps in their own scoring or problems with the rubric. Adjustments to the rubric may be made at this point in the students' favour.

For a more public performance, the moderation activity is more critical as the stakes are higher. During the training activity, assessors should work in pairs or trios to award scores individually, and then discuss their ratings to ensure that they are applying the criteria in a similar manner. The aim of this type of activity is the determination of the "must have" characteristics associated with the different levels of mastery as they are demonstrated by the group being assessed. This exercise would improve inter-rater reliability because performances do not fall neatly into one level of mastery.

Rubrics can assist in managing the subjectivity in the assessment of complex tasks like the products from the different art disciplines. The publicity of the descriptors for each set of criteria increases the accountability of judges and manages their expectations for the performances. Performers receive immediate feedback about their presentations in the absence of additional comments from the judges, because they can relate the scores to the descriptors in each category.

Creative Work and Creativity

Lindström (2006) described creative work as having "a number of dimensions," including "the ability to adopt a number of stances or perspectives" embracing both "cultural and social resources," and pursuing "ideas for a period of time long enough to allow the sources of the problem to be identified, and ways of solving them to be found" (p. 56). This definition gives some clues about how creativity can be assessed

objectively. Lindström (2006) suggested the following questions:

- What differing perspectives have been employed?

- What cultural resources were used? What social resources were used?

- What problems were solved?

- Were the problem-solving strategies novel or innovative?

Lindström (2006) also described creative people as possessing the ability to adopt a number of stances, focus alternately on the technical aspects of their work, and rationalize their choices, while simultaneously describing what was successful or unsuccessful about their work. This capacity to engage in self-assessment can be cultivated in students (Lindström), and this would develop their problem-solving and critical thinking skills. Problem solving can assist with the creative process, which is a natural component of art production. The inclusion of this dimension in an objective assessment activity would validate artists' work as they continue to draw from their creative pools for their presentations. Assessors, in turn, would become more accepting of the multiple solutions and variety in artistic presentations.

Conclusion

Any assessment process should determine how successful participants have been (Leach, Neutze, & Zepke, 2001). When students are preparing to be assessed they need to feel assured that what is being tested is what they have had experience with and, more importantly, that they will be tested in the ways that they have been taught. The assessment experience should focus on the criteria and associated skills and not on what was perceived to be missing from the performance. Participants should not feel devalued after the assessment experience but should be given appropriate feedback for use in the further development of their skills.

Subjectivity is a natural aspect of arts assessments. Its impact can be managed through the use of rubrics and the training of assessors. Research about constructs, moderation activities, and the use of experts will enhance the validity and reliability of rubrics. The attribution of beauty is based on individual taste, but creativity can be examined with less subjectivity when we understand what is involved in the creative process.

References

Arter, J., & McTighe, J. (2001). *Scoring rubrics in the classroom: Using performance criteria for assessing and improving student performance*. Thousand Oaks, CA: Corwin Press.

Bailin, S. (1993). Other people's products: The value of performing and appreciating. *Journal of Aesthetic Education, 27*(2*)*, 59–69.

Byrne, C., MacDonald, R., & Carlton, L. (2003). Assessing creativity in musical compositions: Flow as an assessment tool. *British Journal of Music Education, 20*(3), 277–290.

Cohen, S. (1997). Dance and the question of fidelity. *Journal of Aesthetic Education, 31*(2), 51–53.

Goodrich Andrade, H. (2000). Using rubrics to promote thinking and learning. *Educational Leadership*, 57(5), 13–18.

Lavender, R. (2003). The subordination of aesthetic fundamentals in college art instruction. *Journal of Aesthetic Education, 37*(3), 41–57.

Leach, L., Neutze, G., & Zepke, N. (2001). Assessment and empowerment: Some critical questions. *Assessment and Evaluation in Higher Education*, *26*(4), 293–305.

Lindström, L. (2006). Creativity: What is it? Can you assess it? Can it be taught? *International Journal of Art & Design Education, 25*(1), 53–66.

Marzano, R., Pickering, D., & McTighe, J. (1994). *Assessing student outcomes: Performance assessment using the dimensions of learning model*. Alexandria, VA: Association of Supervision and Curriculum Development.

Matthews, P. (2001). Aesthetic appreciation of art and nature. *British Journal of Aesthetics, 41*(4), 395–410.

McFee, G. (2005). The artistic and the aesthetic. *British Journal of Aesthetics, 45(4)*, 368- 387.

Mehrens, W., Popham, W., & Ryan, J. (1998). How to prepare students for performance assessments. *Educational Measurement: Issues and Practice, 17*(1), 18–22.

Oreck, B., Owen, S., & Baum, S. (2003). Validity, reliability and equity issues in an observational talent assessment process in the performing arts. *Journal for the Education of the Gifted, 27*(1), 62–94.

Prendergast, M. (2004). Playing attention: Contemporary aesthetics and performing arts audience education. *Journal of Aesthetic Education, 38*(3), 36–51.

Pugh, A., & Pugh, L. (1998). *Music in the early years.* London: Routledge.

Richardson, C., & Atterbury, B. (2001). *Music everyday: Transforming the elementary classroom.* Columbus, OH: Mc Graw Hill.

Rudner, L. (1992). Reducing errors due to the use of judges. *Practical Assessment Research & Evaluation, 3*(3). Retrieved March 20, 2007, from http://pareonline.net/getvn.asp?v=3&n=3

Soep, E. (2005). Critique: Where art meets assessment. *Phi Delta Kappan, 87*(1*)*, 38–48; 58–63.

Speck, B. (1998). *Unveiling some of the mystery of professional judgement in classroom assessment* (New Directions for Teaching and Learning, 74). *San Francisco, CA:* Jossey-Bass.

Stemler, S. E. (2004). A comparison of consensus, consistency and measurement approaches to estimating interrater reliability. *Practical Assessment, Research and Evaluation,* 9(4). Retrieved March 20, 2007, from http://pareonline.net/getvn.asp?v=9&n=4

Evaluations of Quality Teaching for University Quality Assurance

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Abstract. Analysis of degree results for The University of the West Indies (UWI), Mona, Jamaica, evidences exponential grade inflation since the introduction, publication, and administrative uses of Student Evaluations of Teaching (SETs) (Bastick, 2004). This paper explains how SETs contribute to grade inflation and why, despite their recognized disastrous effects on education, they continue to be used for quality assurance in English-speaking universities. An alternative method of assessing Quality Teaching is introduced that, by integrating teaching, learning, and assessment, can identify and offer detailed reports to advise at-risk students and suggest detailed modifications to teaching that optimize attainment. The method measures individuals' teaching/learning experiences. It uses a five-minute feedback form to assess the alignment of students' and lecturer's expectations. Results show that these in-course alignments predict enjoyment of teaching and students' academic attainment on course assessments. Hence, mismatched alignment and assessment results identify, for second marking, individual examination and coursework scripts that might have been wrongly marked. Analyses of alignments result in measures of quality teaching provided by lecturers, and experienced by groups of students, which can be rigorously compared between courses, subjects, and departments across the university for inclusion in quality assurance reports. The significance of this paper is that it presents an original, alternative, cost-effective assessment of quality teaching for tertiary institutions that can be demonstrated to improve education.

Introduction

Student Evaluation of Teaching

The traditional method of assessing quality of teaching has been by questionnaires that ask students to anonymously rate the quality of teaching on a four- or five-point Likert scale, from *strongly disagree* to *strongly agree*. In the literature, the use of these forms is variously referred to as Student Evaluations of Teaching (SETs) or Student Perceptions of Teaching (SPOTs).

SETs have been used in universities since the 1920s (McKeachie, 1996), and have been used extensively for more than 30 years as part of the quality assurance cycle to assess the quality of teaching and, to varying extents, in different countries as an indicator of successful teaching for promotion, award, and tenure decisions (Aleamoni, 1999). However, high SET ratings of quality teaching are significantly predicted by many situational factors other than quality teaching (Evans & McNelis, 2000) and, unfortunately, their use has been accompanied by many counter-productive effects such as discouraging innovative teaching and deterring

instructors from challenging students (Damron, 1995; Murray, 1984; Ruskai, 1996). Although their outcomes are intended to improve teaching, a major negative effect of also using them for promotion and tenure decisions has been to contribute to the lowering of academic standards. Results of analyses of SETs and expected grades suggest that instructors can "buy" better evaluations via more lenient grading (Johnson, 2003; Krautmann & Sander, 1999). In the copious literature on the subject, this effect is referred to as "grade inflation" or "dumbing down courses" (Simon, 1996). SETs have now been shown to contribute to grade inflation (Eiszler, 2002). Several articles, cited by Kanagaretnam, Mathieu, and Thevaranjan (2003), addressing the influence of SETs on increasing grade inflation and reducing student learning have appeared in the US Chronicle of Higher Education. Manhire (2004) reports that "grade inflation is widely reported in the literature; and virtually all reports of it are critical" (p. 2). A review of grade inflation can be found in Jost (2002). In their recent extensive empirical modelling study, analysing nearly 50,000 enrolments in almost 400 offerings of economics courses at Ohio State University, Weinberg, Fleisher, and Hashimoto (2007)

included future grades in their dataset and concluded:

> Assuming that future grades reflect learning in the current course, these findings suggest that grading leniency, but not learning, has a significant impact on student evaluations. While not always statistically significant, women and foreign instructors tend to receive lower evaluations, black students tend to give higher evaluations, and honors and night classes tend to give higher evaluations.... On the assumption that our measure of learning is valid, the preceding findings imply that grading leniency is an important determinant of evaluations and that students do not reward instructors who generate learning per se.... We have shown that student evaluations differ from the ideal construct, because they do not appear to reflect learning, but are sensitive to grading leniency. Even if they did not suffer from these two problems, it is unlikely that SEI scores would properly weight learning relative to the course experience – they would do so only if student placed the same weight on these items as the social planner. Moreover, there is evidence that evaluations vary with class characteristics, including the type of section and composition of the class, and some evidence that students give lower evaluations to women and to foreign-born instructors. (pp. 18, 19, 28)

SETs have become known as little more than "smile sheets" measuring popularity and "customer satisfaction" (Altschuler, 1999), and lecturers have developed many methods for improving their SET scores that do not necessary improve their teaching (Crumbley, 1995). Some universities that use SETs have for some time been making statistical adjustments for these effects (Gillmore & Greenwald, 1999).

In addition, the continuing use of SETs has negative influences on the institution's teaching and learning culture. Many organizational factors and resources affect the teaching and learning culture of an educational institution. There is a business maxim that states "what gets measured gets done. What gets measured and feedback gets done well. What gets rewarded gets repeated" (Jones & Bearley 1996, p. 155). In educational institutions, what gets rewarded is (a) the assessment of faculty teaching and (b) the assessment of student learning. It is how the assessment of how teaching is done and how the assessment of learning is done that have a great influence on the learning and teaching culture of the institution (Beichner, 1994; Hake, 1998; Halloun, Hake, Mosca, & Hestenes, 1997; Halloun & Hestenes, 1985; Hestenes & Wells, 1992; Hestenes, Wells, & Swackhamer 1992; Sokoloff & Thornton, 1997). These three aspects: (a) teaching, (b) learning, and (c) the assessment of both teaching and learning, are so interrelated that they should be considered together.

Other problems with current uses of SETs. Unfortunately, traditional forms of assessment lack integration, and problems caused by these traditional forms of assessment negatively influence the learning and teaching culture of institutions. The common traditional assessment of faculty teaching is via the use of student opinionnaires. For example, Seldin (1984) found that administrators utilized student opinionnaires in two-thirds of 616 institutions surveyed. Student opinionnaires have been criticized as popularity contests, where staff reduce the standards of their courses and lead students to expect high grades in order to "win their vote" (Greenwald, 1997; Greenwald & Gillmore, 1997; Howard & Maxwell, 1982; Marsh & Dunkin, 1997; Marsh & Roche, 1997, 1998). Faculty are expected to change their teaching in view of this anonymous feedback (Moses, 1996). Often, these opinionnaires are anonymous because students fear retribution for "failing" their teachers or might be thought to be soliciting favourable grades for favourable assessments of their teachers. Faculty feel uncomfortable in this one-sided contest where they can be anonymously failed by the students they teach, yet have little influence over the selection of the students they must teach. As Linda Mabry says on the evaluation of teaching "Teachers have little or no control over which students will be assigned to their classrooms, how strong or poor their motivation and preparation to learn, their level of transience, or any of a number of other pertinent factors" (1999, p. 2).

Some faculty feel that having to change their course emphasis in order to please naive students is an infringement of their professional freedom to teach how they believe, in their best professional judgement, their subject should be taught (Crumbley, 1995). It is questionable how much a university should take the role of academic leadership or be managed as a business subservient to the student customer where "the customer is always right." These influences have been contributing to a negative culture of low academic standards, demotivated professionalism, and mutual distrust for some years (Arreola, 1983; Cashin 1983; Cherry, Grant, & Kalinos, 1988). For example, "What is called development, growth, and self-improvement today becomes the means by which decisions for institutional personnel management purposes are made tomorrow. Faculties become wary and suspicious of this double message involved in the evaluation system" (Mark, 1982, p. 168).

The traditional assessment of student learning is via examinations and coursework assignments of various kinds. Here, the one-sided game is against the student who has little educational recourse and so can only resort to complaint about the course and the faculty—even to the extent of litigation. To protect themselves from the "court case student," faculty favour objective assessment that does not expose their professional judgements about the students' work. Such objective assessments tend to emphasize Bloom's lowest cognitive level of rote learning. For example,

> McKeachie (1987) has recently reminded educational researchers and practitioners that the achievement tests assessing student learning in the sorts of studies reviewed here typically measure lower-level educational objectives such as memory of facts and definitions rather than higher-level outcomes such as critical thinking and problem-solving that are usually taken as important in higher education. (Feldman, 1989, p. 583)

Continuing education students in professional subjects rightly devalue courses that emphasize only rote learning, to the extent that they are prepared to cheat in order to maximize their meaningless marks. Problem attendance is a feature of such courses—students get the lecture notes from those who do attend. Students learn not to criticize the views of faculty but to unquestionably do as they are told, and to parrot what they believe faculty expects them to regurgitate in examinations. Such are the negative effects traditional assessments of teaching and learning have on the teaching and learning culture of the institution. Research has indicated that these problems are in part due to misunderstanding of mutual expectations (Bastick, 1995). Faculty lack clarity in explicitly stating their expectations and relating these to their teaching and assessment of the students. The students misunderstand what is expected of them and are confused.

In light of these negative influences we ask, "How can alternative SETs be designed to have positive influences on an institution's teaching and learning culture?" We answer this by considering what we usually mean by a positive teaching and learning institutional culture? The literature indicates that it is one that encourages staff and students to be independent critical thinkers developing the attitudes and values of their profession; one where students and faculty value and enjoy the work they are doing; one where faculty and students respectfully work together based on a foundation of mutual trust. However, if an alternative method of assessment is to promote these changes, then, first, that method must accommodate the wide institutional variations that exist in assessment preferences, and aim to improve teaching and learning by allowing those lecturers who use it to appreciate more fitting styles of teaching and enable them to allow their students to adopt more fitting styles of learning. Secondly, an alternative method of assessing teaching and learning must resolve misunderstandings and confusions about mutual expectations in order to avoid the problems that lead to a negative teaching and learning culture. Thirdly, an alternative method must promote a positive teaching and learning culture by (a) ensuring students and faculty understand each other's expectations, and (b) ensuring that students and faculty are both working towards the same expectations (Abrami, 1989; Abrami, d'Apollonia, & Cohen, 1990; Bastick, 1995; L'Hommedieu, Menges, & Brinko, 1990; Miller, 1986; Scriven, 1994, 1995).

It is also important to separate evaluations of attainment from evaluations of enjoyment, so that student evaluations of course quality are not simply smile sheets misused as assessments of academic attainment (Hake, 1998). Hence, the two separated and distinct criteria of effective teaching used by this alternate method of assessment are to maximize (a) the academic attainment of the students and (b) the students' and the lecturer's enjoyment of the course. The measurable indicator of effective teaching used is that the students and the lecturer are working towards the same expectations of the three abilities that underlie quality teaching and learning. The construct validity that this measurable indicator assesses the criteria is $p<0.01$ for both (a) and (b) (Bastick, 1995).

Interviews with faculty on professional courses have indicated that their implicit expectations can be described and assessed in terms of these three abilities: (a) technical skills – rote learning, assessed by the accuracy of reproduction; (b) professional competence – appropriate transfer of skills to a novel situation, assessed by the justification of appropriateness; and (c) professional attitudes – the integration of one's life and work by one's values and beliefs, assessed by demonstration (Bastick, 1995). Faculty can be assisted in making these expectations explicit and in designing coursework and examinations that offer opportunities for assessing these three abilities. This professional development can be expected to improve the quality of their teaching (Askew, Brown, Rhodes, Johnson, & Wiliam, 1997). It should be their professional prerogative to decide, and their professional responsibility to justify to their peers and their students, the emphasis they judge should be given to each of the three abilities on their courses. These judgements will depend on the subject, its level, and the professional inclination of the lecturer. For example, lecturers on three-year B.Ed. courses expect an emphasis on technical skills in the first year, moving to an emphasis on professional competence in the second year, and a greater emphasis on professional attitudes in the third year.

It seems that one reason SETs continue to be used is that there has not been an expedient alternative.

This paper reports an inexpensive and efficient alternative method of measuring teaching quality. The method breaks the positive reciprocating feedback of lecturers evaluating students who evaluate lecturers, which has been blamed for grade inflation and dumbing down of courses. The method aligns students' in-course expectations for change with their lecturer's expectation for change in three process objects, namely, Skills, Understanding, and Attitudes. It is shown, using sample course data, that these in-course alignment indicators predict quality teaching, which is validated after the course using outcomes of students' academic achievements and course enjoyment. A major contribution of this alignment method is that optimum in-course changes can be calculated which minimize the in-course alignment scores, for the whole cohort or for any student sub-group of interest, and thus maximize the students' predicted attainments. Hence, as the method only takes five minutes to administer, it can also be introduced at the level of the individual instructor who wishes to keep his or her teaching on track.

Alignment of Expectations uses a single form and results in one decision point number. Thus, it can be used by the administration at the end of courses for comparable promotion and tenure decisions across the institution.

Aligning Expectations

Both inside and outside of education, there are many psychometric instruments that use what are categorized here as "alignment methods." The definitive characteristic of an alignment method is that a respondent's current state is assessed and his/her ideal state is also assessed on the same indicator(s). The differences between the current and ideal states are then used as measures of alignment. Where a difference is large, there is poor alignment, which is indicative of problems. Where a difference is small, alignment is close, which indicates that the current state is close to the ideal. Improved alignment can also be used as a measure of successful intervention. What is crucial to the Alignment of Expectations is the choice of indicator(s) measured to assess the current and ideal states. For each course, Cohen (1987, 1991) used three different objectives that were derived from the course instructor's idiosyncratic values.

However, to allow comparisons across courses, the alignment method used here, following Bloom's (1956) taxonomy of educational objectives, defines three standard process objectives that are emphasized to different degrees in quality teaching and learning. These are Skills, Understanding, and Attitudes, operationally defined here as:

- Skills – learning of facts/processes; assessed by speedy accurate reproduction

- Understanding – professional competence; assessed by justification of novel application

- Attitudes – professional values; assessed by demonstration

The method uses alignment on these process objectives as indicators of quality teaching. It should be noted that critical thinking is expected to be promoted by teaching and assessment of professional competence. This is because answers are not assessed as being right or wrong; only justifications that offer evidence of critical thinking are assessed. Note also that alignment is not based on agreed course or content objectives but on process objectives like those popularized by Bloom (1956). Just as course and content objectives are commonly used to emphasize different levels of Bloom's cognitive domain, so in this alignment method, course and content objectives are similarly used as vehicles for emphasizing the desired degrees of Skills, Understanding, and Attitudes. This emphasis will vary according to the course level and culture of the subject taught.

What are aligned are "changes in emphasis expected by the lecturer" and "changes in emphasis expected by the students" in each of these three cogno-affective process objectives. Numerically stated: Alignment = changes expected by lecturer – changes expected by students. Zero is the perfect score; the hypothesis being that students achieve higher standards if they and their lecturer are working towards the same changes. Figure 1 shows the six core questions that the lecturer and each student answers for the alignment to be calculated, and also shows two validity-checking questions on "course enjoyment." This alignment method distinguishes between the assessment of enjoyment and the assessment of academic standards (Naftulin & Ware, 1973).

Figure 1. Five-minute feedback form.

These forms are confidential, not anonymous. When students enrol, the process objectives are explained with generalized examples related to teaching and assessment. As part of their orientation each year, they take a simple knowledge test to qualify the quality of their feedback. At the start of each course, their lecturer gives subject-specific examples as part of the introduction to the course. It has been found that exemplary university teachers find their own different effective teaching dimensions and strategies to achieve excellence (Hativa, Barak, & Simhi, 1999). Hence, although staff development units may advise, the teaching techniques for attaining these process objectives are left to the lecturer as a matter of informed professional choice.

Using lecturer and student data from the forms in Figure 1, individuals' alignments can be calculated and grouped to find the mean alignment of any student sub-group of interest—males vs. females; experienced vs. novice students; older vs. younger; option 'x' vs. option 'y'; mainstream vs. at-risk students, and so on.

Two alignment scores are calculated:

- Alignment of Scope (changes in absolute quantity of the three objectives)
- Alignment of Proportions (changes in relative quantity of the three objectives)

The simple arithmetic calculations of these alignments are explained in detail later and shown in Tables 2, 3, 4, and 7.

It is important to note that these formative alignment indicators, which are measured during the course, are only predictors of quality teaching. They are only proxy measures and not the criteria of quality teaching. The two post-course summative criteria of quality teaching are more traditional:

- Students' academic standards
- Students' enjoyment of the teaching

Validation of the Hypothesis

When the courses are over and the academic results are compared with the alignment scores, it is possible to validate the hypothesis for each course, and for each sub-group of students taking each course, by correlating the Alignment of Scope with academic standards, and by correlating

the Alignment of Proportions with enjoyment of learning—partialling for quality of feedback if required. Further, when the course has finished, it is possible to use sensitivity analyses on the data to calculate those lecturer changes that would have most aligned the teaching and, thus, according to the alignment hypothesis, maximized the academic results and enjoyment of the students. It is seen from actual alignment data illustrated in Table 1, which is explained below, that the choice of these preferred changes would have increased the correlations between alignment and academic standards, thus further validating the hypothesis that alignments are predictors of quality teaching. This "sensitive analysis" is a key tool in this alignment method because it can be used on data collected during the course to suggest ongoing changes for optimizing quality teaching and learning for the current students before their current finishes.

Illustrative Results

In practice, the eight numbers from the lecturer and each student, together with other student data of interest, and quality of feedback if required, are entered into a spreadsheet and all results are calculated and output by the computer, with diagnostic reports for the lecturer and/or the administration. However, in order to better understand this alignment method, the simple though tedious arithmetic is now described in complete detail with accompanying rationalizations. The calculations are shown in Tables 2, 3, 4, and 7.

Table 1 illustrates a complete typical computer data input, analysis, and results sheet for the Alignment of Expectations of a course. The method is designed to be generalized across courses, lecturers, subjects, levels, institutions, and cultures, and the results have been replicated on diverse courses from psychology to assessment courses, from entry level to master's level, and in culturally diverse environments from universities in Australia and the South Pacific to the Caribbean. This specific illustrative data is from the assessment of a postgraduate teacher education course called "Psychology for Teachers," which was taken by 36 mainly mature students attending a Caribbean university with a tradition of British education.

Part 1 For the Lecturer		
Data from the Lecturer's form		Students' Post-course Academic results
ALIGNMENT ASSESSMENT - DATA SHEET OPTIMISATION OF TEACHING		
Part 2 For the Students		
Data from the Students' forms		
Part 3 Summary Results		
Lecturer's changes in the three process objectives	In-course Alignment predictors	Post-course validations

Figure 2. Schematic illustrating the main sections of Table 1.

Table 1. Example of Computer Input, Analysis, and Results for Alignment of Expectations

Part 1 For the Lecturer — Course ED40C — Date 15/11/00 — Lecturer's Name … — Student Variables of Interest

	Skills is now	Skills should be	Understanding is now	Understanding should be	Attitudes is now	Attitudes should be	Enjoyment					Academic Results for Post-course Validation
Start	30	60	40	45	60	50	50					
Best	30	30	40	44	60	71						

ALIGNMENT ASSESSMENT - DATA SHEET OPTIMISATION OF TEACHING

Part 2 For the Students — # in class 36 — # present 20

#	Skills is now	Skills should be	Understanding is now	Understanding should be	Attitudes is now	Attitudes should be	Enjoyment	Sex	Age	Option	Years Teaching	Academic Results for Post-course Validation
12	50	50	95	98	90	95	95	2	30	2	6	56%
25	35	70	60	80	80	88	55	2	25	2	3	57%
35	80	40	20	60	40	50	30	2	25	2	3	43%
30	40	80	70	90	70	90	75	2	21	3	0	71%

Part 3 Summary Results — Lecturer's changes — Alignment Predictors — Mean post-course results — Validation Correlations

	Scope Skills	Scope Underst	Scope Attitudes	Proportion Skills	Proportion Underst	Proportion Attitudes	MScope	MProp	Enjoy	Acad	Scope	Prop
	Whole	Class			n=20							
Start	100%	13%	-17%	68%	-6%	-30%	1.499	1.259	69.5%	63.0%	-0.265	-0.278
Best	0%	10%	19%	-9%	1%	8%	0.674	0.507			-0.307	-0.576
	Option	2	History		n=3							
Start	100%	13%	-17%	68%	-6%	-30%	1.861	1.658	60.0%	52.2%		
Best	0%	33%	9%	-11%	18%	-4%	1.226	1.226				
	Option	4	Modern Languages		n=4							
Start	100%	13%	-17%	68%	-6%	-30%	1.200	0.972	72.5%	75.7%		
Best	13%	2%	6%	6%	-5%	-1%	0.223	0.203				

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In order to explain the structure of Table 1, Figure 2 highlights its three main sections. Figure 2 shows that Table 1 has three main parts: Part 1 – "For the Lecturer"; Part 2 – "For the Students"; and Part 3 – the "Summary Results." Parts 1 and 2 hold data from the lecturer's form and the students' forms, respectively. This data can be entered and analysed during the course to calculate alignment predictors and optimal changes the lecturer should make to maximize students' post-course academic attainment. Part 2 also has a section where the students' post-course academic results are entered so that the alignment predictions can be validated. Part 3 holds results of calculations from the lecturer's and students' in-course data, which show current in-course alignments resulting from the current changes that the lecturer is working towards. It also holds the calculated optimal changes that the lecturer should work towards to maximize student attainment.

In Part 1 of Table 1, the "Start" row shows the first seven numbers input from the lecturer's alignment form displayed in Figure 1. The eighth number was not used for this analysis. Part 2, "For the Students," shows just a selection of four rows for students numbered #12, #25, #35, and #30, from the alignment forms of all 36 students in this course. As well as the first seven numbers from the students' alignment forms, these rows have been extended to show other variables for the identification of sub-groups of interest. The last column for the students shows their academic results. These were entered after the course and are used to validate the predictions from the in-course alignment indicators and to further validate the alignment hypothesis. The "Summary Results" section, Part 3, shows the calculated changes resulting from the lecturer's start position. In this class, there were six option sub-groups. Part 3 also shows results for lowest and highest attaining option sub-groups – for Option 2 "History" students and for Option 4 "Modern language" students, respectively. All the computations are done by computer, but for elucidation the detailed calculations contributing to these results are now explained and illustrated in Tables 2, 3, 4, and 7.

Calculating Alignment of Scope

Table 2 shows how the six raw ratings of the process objectives given by the lecturer and the corresponding six raw ratings given by student #12 are used to calculate the Scope alignment for that student. The lecturer's raw ratings of 30, 40, 40, 45, 60, and 50 are taken from Table 1, Part 1 – "For the Lecturer." The six raw ratings given by student #12 of 50, 50, 95, 98, 90, and 95 are taken from Table 1, Part 2 – "For the Students." For ease of comparison of how Scope and Proportion Alignments are calculated, the same raw ratings from student #12 are also used in Table 7 to explain the calculation of alignment of Proportion.

Table 2. Calculation of Scope Alignment

#12 Scope	LECTURER'S RATINGS			STUDENT'S RATINGS			ALIGNMENT	
	IS NOW	SHOULD BE	CHANGE (L)	IS NOW	SHOULD BE	CHANGE (S)	S-L	ABSOLUTE
SKILLS	30	60	100%	50	50	0%	-100%	100%
UNDERSTANDING	40	45	13%	95	98	3%	-9%	9%
ATTITUDE	60	50	-17%	90	95	6%	22%	22%
							TOTAL Scope	132%

The changes in Scope expected by the lecturer, and those expected by each student, for each process objective are calculated by dividing the difference between the raw ratings of the ideal state *should be* and current state *is now* by the raw ratings for the current state.

Using the raw ratings: Change in Scope = (*should be – is now*)/*is now*

It is seen from Table 2, for example, that the lecturer's starting position for Skills of 30 for *is now* and 60 for *should be* requires a 100% increase, that is, (60–30)/30=100%. The student's starting position for Skills of 50 for *is now* and 50 for *should be* requires a change of (50–50)/50=0%. It should be noted that each difference is "grounded" by dividing by the starting position, resulting in a percentage increase. Just as $100 can mean more to a poor person than to a rich person, this division is intended to compensate for the diminishing expectations represented by the same differences at higher parts of the scale. For example, an increase of 10 points from a low starting position of 5 up to 15 implies greater "expectation" of change than an increase of the same 10 points from the higher starting position of 50 up to 60, namely, (15–5)/5=200% compared to (60–50)/50=20%.

The alignment of each process objective is the difference in change expected by the Student (S) and the change expected by the Lecturer (L); Alignment = S–L. For example, Table 2 shows that the Skills alignment for student #12 is 0%-100%=-100%. The negative sign indicates that the student is below the lecturer's expectation for Skills. However, the student's positive Attitude alignment of 22% indicates that the student is ahead of the lecturer's expectation for Attitude. Two further demonstrations of the calculation of Scope alignment are given in Tables 3 and 4. When the alignment form is used during the course, rather than at the end of the course, these positive and negative process alignments can be reported individually or as sub-group statistics as the basis of diagnostic reports to guide teaching. However, it is the absolute alignments on the three process objectives that are summed to give the total Scope alignment for this student. The reason absolute values are chosen to be summed is to avoid the possibility of positive and negative alignments cancelling each other and producing a result that would hide the degree of misaligned expectations. Again, absolute alignments can be reported individually or as sub-group statistics for the basis of diagnostic reports to guide teaching. However, it is the totals of the absolute Scope alignments that are used as predictors of academic attainment for individuals, for student sub-groups, and for the group as a whole. The mean absolute Scope alignment for the whole group is the main indicator of quality teaching and predicts the academic attainment for the group.

Validating Scope Alignment as a Predictor of Academic Attainment

The alignment hypothesis predicts that students will achieve higher academic attainments if they and their lecturer are working towards the same changes. Thus, to validate the hypothesis, we expect the more aligned students, —the ones with the lower in-course alignment scores—to have the higher post-course academic results. The pedagogic reason for this is that the in-course alignments measure course teaching/ learning expectations. The post-course assessment also measures course teaching/ learning expectations. Therefore, the two measures are expected to correlate. This can be tested for each course that uses this alignment method simply by correlating in-course alignment scores with post-course academic attainment. It can also be validated for student sub-groups by comparing the mean Scope alignments and mean academic attainments of the groups. Partial correlations can be used to control for the quality of students' feedback, if required. In this example, partial correlations were not used so as to give rigorous tests of the alignment hypothesis.

Post-course academic attainments for the illustrative data set in Table 1 have been entered for individual students in the last column of Part 2, "For the Students." When we calculate the Scope alignment of the students we would expect to find that their alignment and attainment is inversely related, which would validate the hypothesis. Tables 3 and 4 give further examples of the calculation of Scope alignments for students #30 and #35, who have the highest and lowest academic attainments, respectively, shown in Table 1.

Table 3. Calculation of Scope Alignment for Student #30

#30 Scope	LECTURER'S RATINGS			STUDENT'S RATINGS			ALIGNMENT	
	IS NOW	SHOULD BE	CHANGE (L)	IS NOW	SHOULD BE	CHANGE (S)	S-L	ABSOLUTE
SKILLS	30	60	100%	40	80	100%	0%	0%
UNDERSTANDING	40	45	13%	70	90	29%	16%	16%
ATTITUDE	60	50	-17%	70	90	29%	45%	45%
							TOTAL Scope ALIGNMENT	61%

Table 4. Calculation of Scope Alignment for Student #35

#35 Scope	LECTURER'S RATINGS			STUDENT'S RATINGS			ALIGNMENT	
	IS NOW	SHOULD BE	CHANGE (L)	IS NOW	SHOULD BE	CHANGE (S)	S-L	ABSOLUTE
SKILLS	30	60	100%	80	40	-50%	-150%	150%
UNDERSTANDING	40	45	13%	20	60	200%	188%	188%
ATTITUDE	60	50	-17%	40	50	25%	42%	42%
							TOTAL Scope ALIGNMENT	379%

Now that we have demonstrated the calculation of in-course Scope alignments for the three students, #12, #30, and #35, we can compare their Scope alignments with the post-course academic attainments of these students as entered in Table 4.

These paired predictors and criteria for the three demonstration calculations are tabulated in Table 5, and their relationship, illustrated in Figure 3, is seen to be inverse as predicted by the hypothesis.

Table 5. In-Course Scope Alignments and Post-Course Academic Attainments for the Three Demonstrated Calculations

	Individual results	
Student	Total Scope Alignment	Academic Attainment
#30	0.61	71%
#12	1.32	56%
#35	3.79	43%
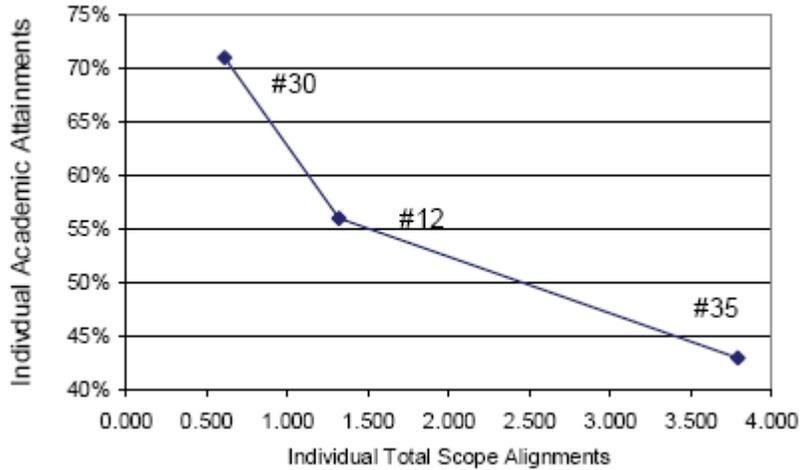
Figure 3. Relation between in-course Scope alignments and post-course academic attainments for demonstrated calculations.

The means of post-course academic results for the whole class and for the two option groups have also been calculated and are also shown in Table 1 in Part 3, "Summary Results." These are abstracted from Table 1 and are listed in Table 6. Their interrelationship, illustrated in Figure 4, is inverse as predicted by the hypothesis.

Table 6. Mean Scope Alignments and Academic Attainments for the Whole Class and Sub-Groups

| | Means | |
	Scope Alignment	Academic Attainment
Whole Class	1.499	63.0%
Sub-Groups		
Option 2	1.861	52.2%
Option 4	1.200	72.5%
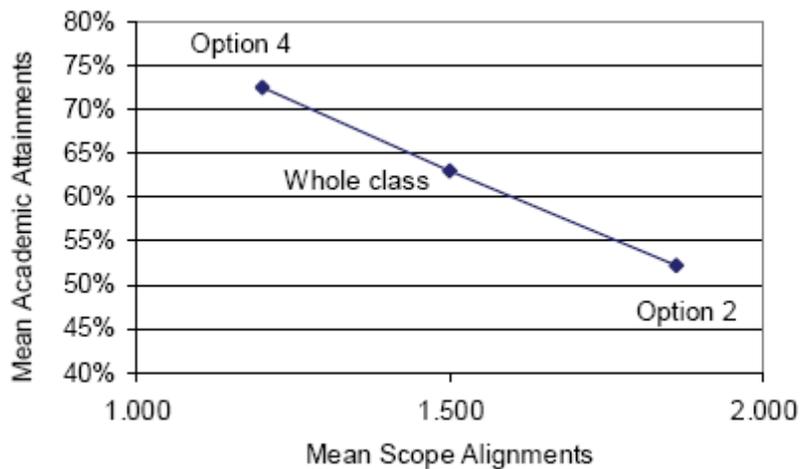
Figure 4. Relation between means of Scope alignment and means of academic attainment.

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The "validation correlations" column in Part 3 of Table 1 shows that the overall correlation of attainment and alignment of Scope for the group is -0.265. This means that the more students are aligned then the higher the students' academic results tend to be. This validates the prediction of academic attainment by alignment of Scope for the whole class. Further evidence validating Scope alignment as a predictor of academic attainment is also given in the section on sensitivity analysis below.

Calculating Alignment of Proportion

The second in-course formative indicator is the alignment of Proportion. This is a predictor of enjoyment of teaching, which is the second criterion of quality teaching. The alignment of Proportion is calculated in the same way as the alignment of Scope, except that the two Proportions represented by each process objective are used in place of the raw ratings. This is illustrated in Table 7 for student #12

.
Table 7. Calculation of Proportion Alignment

#12 Proportions	LECTURER'S RATINGS					STUDENT'S RATINGS					ALIGNMENT	
	IS NOW		SHOULD BE		CHANGE (L)	IS NOW		SHOULD BE		CHANGE (S)	S-L	ABSOLUTE
	Rating	Proportion	Rating	Proportion		Rating	Proportion	Rating	Proportion			
SKILLS	30	0.231	60	0.387	68%	50	0.213	50	0.206	-3%	-71%	71%
UNDERSTANDING	40	0.308	45	0.290	-6%	95	0.404	98	0.403	0%	5%	5%
ATTITUDE	60	0.462	50	0.323	-30%	90	0.383	95	0.391	2%	32%	32%
Totals	130	1	155	1		235	1	243	1		TOTAL Pro ALIGNMENT	109%

We can replace both the *is now* and *should be* raw ratings of any process objective by their Proportions of the total of these three ratings. For example, in Table 7, we see that the total of the lecturer's three raw ratings for *is now* is 30+40+60=130. Using this total, the *is now* Proportion for each process objective can be calculated. For Skills, the *is now* Proportion is 30/130=0.231. For Understanding, the *is now* Proportion is 40/130=0.308, and for Attitude, the *is now* Proportion is 60/130=0.462. A calculation check is that the three Proportions should total to 1, for example, allowing for rounding errors 0.231+0.308+0.462=1, as shown. Similarly, the lecturer's raw ratings of how the three process objectives *should be* can be replaced by their Proportions of the *should be* total, which is 60+45+50=150. So the lecturer's raw rating of 60 for what Skills *should be* is replaced by the Proportion for Skills of 60/150=0.387. The lecturer's *should be* Proportion for Understanding is 45/155=0.290, and for Attitude, the lecturer's *should be* Proportion is 50/155=0.323. The

calculation check that the three Proportions sum to 1 gives us 0.387+0.290+0.323=1, as shown.

The calculations for changes in Proportions and for alignments of Proportions are exactly the same as the calculations for changes in Scope and for alignments of Scope, except that they use the Proportions rather than the raw ratings. The lecturer's expected changes in the Proportions of the process objectives are given by the Proportions for *should be* minus the Proportions for *as is*, and the result divided by the Proportion for *as is*.

Using the Proportions: Change in Proportion = (*should be-is now*)/*is now*

It is seen from Table 7 that the change that the lecturer expects in the Proportion of Skills is (0.3870.231)/0.231=68%. The change that student #12 expects in the Proportion of Skills is (0.206-0.213)/0.213=3%. It is interesting to note that because her raw ratings are equal for *is now* and *should be*, the change in Scope of Skills expected by student #12 is 0%. However, this student's expectation for change in Proportion of Skills is -3%, and not 0%, because the two equal

raw ratings represent different Proportions of the total raw ratings for *is now* and *should be*.

The calculation of alignment of Proportion for each process objective is similar to the calculation for the alignment of Scope, namely, "Change in Proportion expected by the Student (S)" minus "Change in Proportion expected by the Lecturer (L)":

Alignment of Proportion = S-L

For example, Table 7 shows that the alignment of Proportions of Skills for student #12 is -3%-68%=71%. The minus sign indicates that the student's expectation for change is below that of the lecturer's. As with the alignments of Scope, descriptive statistics of these positive and negative alignments of Proportions are reported individually and by student groups as the basis of diagnostic reports for the improvement of teaching. However, as with alignments of Scope, it is the absolute values that are summed to give the

absolute alignment of Proportion. The absolute alignments of Proportion are in-course formative indicators that predict students' enjoyment of teaching.

Validating Proportion Alignment as a Predictor of Enjoyment of Teaching

Part 3 of Table 1 reports both the mean alignment of Proportions and the mean enjoyment of teaching for the whole class and for two of the option groups. These results are abstracted and listed in Table 8 and the relationship between them is illustrated in Figure 5, which again shows the inverse relation predicted by the hypothesis. Although the sizes of the sub-groups were small, these comparative sub-group results are also in agreement with the alignment hypothesis. Using the Student Variables for identification, we can do similar analyses for any sub-group of interest.

Table 8. Means of Proportion Alignments and Enjoyment of Teaching for the Whole Class and Sub-Groups

	Means	
	Proportion Alignment	Enjoyment of Teaching
Whole Class	1.259	69.5%
Sub-Groups		
Option 2	1.658	60.0%
Option 4	0.972	72.5%
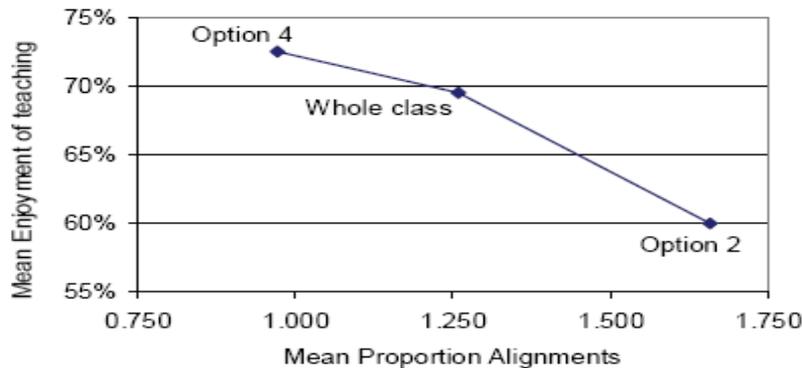
*Figure 5.* Resulting relation between means of Proportion alignment and means of enjoyment of teaching as predicted by the hypothesis.

The "validation correlations" column in Part 3 of Table 1 shows that the overall correlation of enjoyment and alignment of Proportions for the

group is -0.278. This validates the prediction of enjoyment of teaching by alignment of Proportions for the whole class. Further evidence validating

Proportion alignment as a predictor of enjoyment of teaching is given in the section on sensitivity analysis below.

Sensitivity Analysis (SA) for Calculating Changes that Optimize Teaching and Learning

The Alignment software uses a standard Excel linear programming algorithm to find those lecturer changes that result in the best/minimum alignment. There are many choices of what to minimize or maximize for this calculation, and these depend on (a) the indicator of most interest, (b) the malleability of student expectations, and (c) the lecturer's freedom to adjust course expectations. Applications determining these choices are discussed in the "Discussion" section of the guidelines. The first example in Table 1 minimizes the mean Scope alignment of 1.499 for all the students down to 0.674, and calculates the *Best* changes that would give this minimized mean Scope alignment. The resulting *Best* changes are shown in bold type in Part 3 of Table 1. These are 0% for Skills, 10% for Understanding, and 19% for Attitudes. Given the lecturer's initial evaluation of the three process objectives for the whole class as 30, 40, and 60, these optimum changes imply that the lecturer should have been working towards 30+(30x0%)=30 (no change); 40+(40x10%)=44; and 60+(60x19%)=71. These *Best* changes for the whole class are shown for joint comparison in Part 1 of Table 1 under the lecturer's Start ratings. If the lecturer had worked to these *Best* changes, then the students' Scope and Proportion alignment scores would have changed, and the correlations of academic attainment with their new Scope alignments and Proportion alignments would have improved from -0.265 and -0.278 to -0.307 and -0.576, respectively. This sensitivity analysis again demonstrates (a) the predictive validity of the alignment indicators, in that as Scope alignment and Proportion alignment improve, their correlations with attainment and enjoyment also improve; and (b) the validity of the hypothesis that the better the Scope alignment then the higher is the academic attainment, and also the better the Proportion alignment then the more the students enjoy the teaching.

A similar sensitivity analysis was done separately for the History and Modern Language option sub-groups by independently minimizing their mean Scope alignments to find the best changes for these two sub-groups. Table 1, Part 3 shows that the best Scope alignments for these two groups are 1.221 and 0.223, respectively, which would have been given by the optimum *Best* changes in the three process objectives of 0%, 33%, and 9% for the History students; and 13%, 2%, and 6% for the Modern Language students.

If the lecturer had made these *Best* changes for minimizing the Scope alignment, then the mean Proportion alignments for these two option groups would also have improved from 1.658 to 1.226 for the History students and from 0.972 to 0.203 for the Modern Language students, modelling the relationship between enjoyment and attainment, and predicting greater enjoyment and attainment for both of these student sub-groups.

When using this Alignment method, a lecturer does not have to wait until the course is over to obtain diagnostic feedback and to optimize teaching. The data collected in-course can be processed by this same type of sensitivity analysis to calculate the optimum changes that should be made by the lecturer during the course to maximize the students' post-course academic attainment and/or enjoyment of teaching.

Administrative Decision Point Assessment of Quality Teaching

The lecturer may utilize the five-minute alignment form many times during the course to keep his/her teaching on track. The administration can use it just once near the end of the course to calculate the final alignment score for that lecturer's quality of teaching. This results in a single decision point number that can be compared across the institution and used for administrative course decisions to better match institutional expectations and student expectations for higher attainment and enjoyment.

It will be noticed from Table 1 that the minimum alignment that is possible for this group is 0.674. Remember that the best alignment is the one closest to the perfect score of zero. The minimum possible alignment for the History students was much higher at 1.221 than for the Modern Language students at 0.223. These minimum possible alignment scores illustrate the best teaching/learning that is possible with these sub-groups of students, and reflects the fact that

students are not all equally amenable to required educational changes in Skills, Understanding, and Attitudes. To give the lecturer some protection from such intransigence, the decision point measure of quality teaching is taken as the actual alignment less this minimum/best possible alignment. For example, referring to the data given in Table 1, given that the alignment score for the whole class is 1.499 and the best possible alignment for the whole class is 0.674, the Quality Teaching (QT) score for the whole class is 1.499-0.674=0.825. These results from Table 1 are summarized in Table 9.

Table 9. Quality Teaching (QT) Scores That Account for Student Intransigence, for Whole Class and for Student Sub-Groups

	Mean Alignment Scores			Mean Academic Attainment
	Actual Scope	Best Scope	QT Score	
Whole Class	1.499	0.674	0.825	63.0%
Sub-Groups				
Option 2	1.861	1.226	0.635 high QT	52.2%
Option 4	1.200	0.223	0.977 low QT	72.5%

Table 9 illustrates a novel research application of Alignment Expectations. It measures, for the first time, the differential effort that teachers expend in teaching mixed-ability students. Educators generally accept that teachers expend more effort teaching "less-able" students than in teaching the "more-able" students in their classes. It is thought that the more-able students, being more independent, can manage more on their own. For example, as students improve they become less dependent on teacher assistance (Davis, 1998), and higher-ability students use their time more productively while waiting for teacher assistance (Cruz, 1995).

It can be noticed from Table 9 that the quality of teaching was skewed more towards the needs of the more intransigent group: Option 2 History students. The quality of teaching experienced by the History Students (option 2, QT=0.635) was 0.342 better than that experienced by the Modern Language students (option 4, QT=0.977). Table 1 and Table 9 show that this greater teaching quality produced a mean academic attainment of only 52.2% for the History students, compared to the mean academic attainment of 72.5% for the Modern Language students who experienced a 54% lower quality of teaching.

Discussion

This article has introduced the Alignment of Expectations as a method of improving student attainment and enjoyment through the experience of course teaching. The method was demonstrated on a dataset from the assessment of a postgraduate course at a Caribbean university. However, the results have been replicated on assessment data from different subject courses and levels, from entry level to master's level, across universities with culturally diverse environments. The method results in a single decision point number that can be used for comparison between lecturers, courses, faculties, and institutions. The method aligns changes in emphases expected by the students and their lecturers in the three operationally defined process objectives of Skills, Understanding, and Attitudes. The hypothesis is that students will achieve higher academic standards and enjoy the course teaching more if they and their lecturers are working towards the same changes. The pedagogic reason for this is that the in-course alignments measure course teaching/learning expectations. The post-course assessment also measures the same course teaching/learning expectations. Therefore, the two measures are expected to correlate. This alignment is a proxy measure predicting two teaching outcomes. These are the two traditional criteria of quality teaching that are used by the method: academic attainment and enjoyment of teaching. By using this proxy measure, Alignment of Expectations avoids ad hoc restrictions imposed upon the teaching process by traditional cafeteria questionnaires whose questions are listings of so called "best practice" teaching criteria.

With traditional SETs, there are ordinal and personal value measurement restrictions of Likert scales that invalidate the computations. For

example, comparison of raw ratings between questions and students, as involved in calculating means, violates the measurement assumptions of the calculations. The Alignment of Expectations uses a value-added proportion, namely, Change in Scope = (*should be-is now*)/*is now*. The division of value ratings from the same source has the effect of "cancelling out" students' personal values from the students' scores, and cancelling out course curriculum values from the lecturers' scores, making the scores computable. The value-added proportion is analogous to the square-root of the Chi-square calculation (O-E)2/E. This results in a Normal variate, because the square-root of the Chi-square distribution is a Normal distribution, which allows the use of parametric statistics.

This Alignment method separates the measurement of these two outcome criteria—attainment and enjoyment—so as to avoid the smile sheet criticisms levelled at traditional assessments of quality teaching. It also separates the post-course measurement of these criteria from the measurement of in-course formative alignment predictors of quality teaching. The in-course alignments are introspective "non-threatening" feedback ratings that students are pre-trained to use. Students are expected to pass a simple institutional test that qualifies them to give informed feedback. The short briefing for this test helps as an introduction to the lecturers' briefing on the specific uses of the process objectives in the teaching and assessment of their courses. It accredits students to give informed feedback and is intended to raise the importance and quality of the students' feedback responses. The five-minute feedback form is relatively quick to administer and process. Because the form is confidential, and not anonymous, the results can be used to identify the quality of teaching experienced by individuals and by student sub-groups for whom the quality of teaching is a particular concern.

This paper has detailed and justified the simple calculations of alignment for the purposes of elucidation. However, in practice, these calculations are normally computed by the Alignment software, which also uses components of the calculations to offer detailed diagnostic measurement-based reports to improve the teaching experienced by identifiable individuals and student sub-groups. Hence, the method can be used under the initiative of lecturers, usually two

or three times in-course, to adjust their teaching and iron out problems identified before the end-of-course use for administration. The method results in a single decision point indicator of quality that can be used by the administration for management decisions across the institution, for example, ensuring that the students recruited can accommodate the changes expected by the courses. The method places opportunities for targeted improvement in the hands of lecturers and is intended to motivate in-course feedback for improved teaching and learning.

This Alignment method is validated on each course and on each student sub-group with which it is used. It is validated by comparing—for example, by correlating—the in-course predictive alignments with the post-course criteria of teaching, as has been demonstrated in these guidelines. In addition, the hypothesis is validated by sensitivity analyses that use standard linear programming software to show that the predictive correlations between the in-course indicators and post-course criteria of quality teaching improve when the alignments are minimized. The more aligned students and their lecturer were on Scope then the higher were the students' academic results. Also, the more aligned students and their lecturer were on Proportion then the more the students enjoyed the teaching. These results agree with the hypothesis. This same sensitivity analyses calculates the *Best* possible changes in teaching that will optimally align teaching and learning to produce the highest academic attainments and enjoyment of teaching. A focus of these guidelines has been that this optimization of teaching can be done in-course. The sensitivity analysis can be used in-course to notify the lecturer of the changes in emphases of the three process objectives that would optimize the teaching experience for any student or student sub-group in the class. These guidelines have shown how the calculation of student intransigence can identify "problem" students, such as low-ability, over-confident students, who might blame the lecturer for their poor results. The precise information provided by this Alignment method identifies how to optimize alignment. However, if the changes corresponded to a reduction in expected quality of the course and these are implemented by the lecturer, then this would result in dumbing down the course. This Alignment method allows institutions to be

protected from lecturers dumbing down courses to improve their alignment scores. This can be done by requiring pre-negotiated final *should be* ratings towards which the lecturer should work, that correspond to the institution's values of quality for that course. Similarly, the lecturer is protected from over-high institutional expectations that are impractical due to the intransigence of the students registered for the course. By making these expectations explicit and quantifiable, the Alignment of Expectations protects both the institution and the lecturer. The guidelines have shown how intransigence, or teaching difficulty, is identified for each student, student sub-group, and each course, and how this is allowed for in the calculation of quality teaching. This is particularly necessary where faculty are expected to teach subjects that challenge the values of their students (Haskell, 1997).

As the sensitivity analysis gives the optimum changes required for the student cohort, these changes can be used to work backwards from institutional expectations of standards to calculate the minimum current threshold level at which the students need to be in order to reach the final institutional expectation for the course. This threshold level can be compared with the actual current student level, as computed from their eight ratings, and the difference used to assess the need to change the institutional expectations of course quality and/or the quality of the student intake to perhaps make quality teaching more viable for the course.

It can be seen that this Alignment method uses the influence of assessment to improve both the quality of teaching and learning. In particular, it rewards lecturers for emphasizing appropriate degrees of Understanding and Attitude, as well as Skills, in their teaching and assessments. It also rewards students for emphasizing appropriate degrees of Understanding and Attitude, as well as Skills, in their learning and assessed assignments. It improves quality of teaching and learning by assessing Understanding, using justifications of novel application, as modelled in the teaching, which is intended to promote critical thinking.

In Summary

Alignment of Expectations is a method of measuring Quality of Teaching as it relates to the individual student teaching/learning experience and, by aggregation, to groups of students, for example, male compared with female; younger vs. older; pre-qualified vs. less qualified; resident vs. non-resident; comparisons between option groups, and so on. It predicts students' academic attainment and their enjoyment of the course. Hence, it can be used in-course to optimize teaching and learning of individuals and groups for maximum attainment and enjoyment.

It works by considering learning as change in three process objectives—Skills, Understanding, and Attitude—and it operationalizes the learning required by the course and the learning students are prepared to attain in terms of these changes.

Applications

Alignment of the change required by the course and the students' propensity for change is used to:

- predict students' academic achievement and enjoyment of the course
- predict the lecturer's enjoyment of teaching the course
- guide teaching and learning during the course so as to optimize post-course achievement and learning for individual students and for groups of students
- protect university course quality from being dumbed down, through operationally defining the learning required by each course
- protect the lecturer from accusations of poor teaching by recognizing whether students have been accepted for the course who are not capable of the required change
- measure the quality of teaching for each course cohort and for student sub-groups
- provide research results such as (a) comparative teaching quality between courses, departments, faculties, and universities; (b) comparative analysis of teaching quality to student sub-group results to show that more intransigent students require higher-quality teaching for lower-achievement outcomes.

The first application can be used to test the core theory and is validated at the end of each course by comparing student's end-of-course alignments with their course enjoyment and summative attainments (examination and coursework results).

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Comparisons of the Alignment of Expectations with Traditional Student Evaluation of Teaching (SETs):

1. Alignment of Expectations (AoE) fights grade inflation by breaking the feedback dependency of lecturers and students assessing each other. (Unlike SETs, for AoE, students assess their own experiences—the lecturer can be on hand to help individuals with this self-assessment. Students do not assess the lecturer or the course.)

2. Traditional SETs are post-mortem assessments. They do not help the students who completed them. AoE can be used in-course to optimize in-course teaching for maximum attainment and enjoyment.

3. Traditional SETs have no built-in reliability or validity checks and are computationally unsound (e.g., they incorrectly use group comparisons of ipsative measures). The reliability and validity of AoE is validated for each course on which it is used. It uses a value-added ratio transformation to accommodate personal and curriculum values and meet Normality assumptions of psychometric analysis.

4. Traditional SETs cannot be compared between courses, departments, faculties, or universities. AoEs are comparable because each assessment is standardized by grounding in the cultural and academic expectations of its course.

5. Traditional SETs define good teaching absolutely and universaly by their cafeteria questions. AoEs respect professional expertise to teach in the most appropriate fashion best fitting the student/staff/subject/level/course and cultural context.

6. AoE protects lecturers from ad hoc administrative discrimination afforded by the use of SETs for promotion and tenure.

7. Alignment of Expectations protects the quality of university courses from dumbing down which the use of SETs promotes.

8. AoE prevents collusion by untrained anonymous raters by using supervised standardized administration of trained and accredited student raters.

9. Traditional SETs confound enjoyment and assessment whereas AoE separates the two effects.

10. Traditional SETs claim to assess the average class effect, whereas AoE assesses the individual teaching/learning experience.

References

Abrami, P. C., d'Apollonia, S., & Cohen, P. (1990). Validity of student ratings of instruction: What we know and what we do not. *Journal of Educational Psychology, 82*(2), 219–231.

Aleamoni, L. M. (1999). Student rating myths versus research facts from 1924 to 1998. *Journal of Personnel Evaluation in Education, 13*(2), 153–166.

Altschuler, G. (1999, April 4). Let me edutain you. *New York Times, Education Life Supplement*, Section 4A, p. 50.

Arreola, R. A. (1983). Establishing successful faculty evaluation and development programs. In A. Smith (Ed.), *Evaluating faculty and staff* (pp. 83–93; New Directions for Community Colleges, No. 41). San Francisco, CA: Jossey-Bass.

Askew, M., Brown, M. L., Rhodes, V., Johnson, D. C., & Wiliam, D. (1997). *Effective teachers of numeracy: Final report*. London: School of Education, King's College, London.

Bastick, T. (1995, July). *3AF: The three ability framework for assessment in tertiary education*. Paper presented at The 8th International Conference on Assessing Quality in Higher Education, Finland.

Bastick, T. (2004). Commonwealth degrees, from class to equivalence: Changing to GPAs in the Caribbean. *Journal of Studies in International Education, 8*(1), 86–104.

Beichner, R. J. 1994 Testing student interpretation of kinematics graphs. *American Journal of Physics, 62*(8), 750–762.

Bloom, B. S. (1956). *Taxonomy of educational objectives, Handbook 1: The cognitive domain*. New York: McKay.

Cashin, W. E. (1983). Concerns about using student ratings in community colleges. *New Directions for Community Colleges, 11*(1), 57–65.

Cherry, R. L., Grant, P. H., & Kalinos, K. D. (1988). Evaluating full-time faculty members. In R. I. Miller (Ed.), *Evaluating major components of two-year colleges* (pp. 23–24). Washington, DC: College and University Personnel Association.

Cohen, S. A. (1987). Instructional alignment: Searching for a magic bullet. *Educational Researcher, 16*(8), 16–20.

Cohen, S. A. (1991). New alignment experiments: Using outcome-based instruction to teach transfer of learning outcomes: *The Quarterly Journal of the Network of Outcome-Based Schools, 10*(3), 11–16.

Crumbley, D. L. (1995). Dysfunctional effects of summative student evaluations of teaching: Games professors play. *Accounting Perspectives, 1*(1), 67–77.

Cruz, R. E. de la. (1995, April). *Teacher perspectives of the social skills development of children with learning disabilities*. Paper presented at the 73rd Annual International Convention of the Council for Exceptional Children. Indianapolis, IN, USA.

Damron, J. C. (1995). *The three faces of teaching evaluation*. Unpublished manuscript, Douglas College, New Westminster, British Columbia.

Davis, A. P. (1998). Performance achievement and analysis of teaching during choral rehearsals. *Journal of Research in Music Education, 46*(4), 496–509.

Eiszler, C. F. (2002). College students' evaluations of teaching and grade inflation. *Research in Higher Education, 43*(4), 483–501.

Evans, M., & McNelis, P. (2000). *Student evaluations and the assessment of teaching effectiveness: What can we learn from the data*? Washington, DC: Economics Department, Georgetown University.

Feldman, K. A. (1989). The association between student ratings of specific instructional dimensions and student achievement: Refining and extending the synthesis of data from multisection validity studies. *Research on Higher Education, 30*, 583–645.

Gillmore, G. M., & Greenwald, A. G. (1999). Using statistical adjustment to reduce biases in student ratings. *American Psychologist, 54*(7), 518–519.

Greenwald, A. G. (1997). Validity concerns and usefulness of student ratings of instruction. *American Psychologist, 52,* 1182–1186.

Greenwald, A. G., & Gillmore G. M. (1997). Grading leniency is a removable contaminant of student ratings. *American Psychologist, 52*(11), 1209–1217.

Hake, R. R. (1998). Interactive-engagement vs traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics, 66*, 64–74.

Halloun, I., Hake, R. R., Mosca, E. P., & Hestenes, D. (1997). *Peer instruction: A user's manual*. New York: Prentice Hall.

Halloun, I., & Hestenes, D. (1985) The initial knowledge state of college physics students. *American Journal of Physics, 53*, 1043–1055.

Haskell, R. E. (1997), Academic freedom, tenure, and student evaluations of faculty: Galloping polls in the 21st century. *Education Policy Analysis Archives, 5*(6). Retrieved from http://epaa.asu.edu/epaa/v5n6.html

Hativa, N., Barak, R., & Simhi, E. (1999, April). *Expert university teachers: Thinking, knowledge and practice regarding effective teaching behaviors*. Paper presented at the Annual Meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Hestenes, D., & Wells, M. (1992). A mechanics baseline test. *Physics Teacher, 30*, 159–165.

Hestenes, D., Wells, M., & Swackhamer, G. (1992). Force concept inventory. *Physics Teacher, 30*, 141–151.

Howard, G. S., & Maxwell, S. E. (1982). Do grades contaminate student evaluations of instruction? *Research in Higher Education 16*, 175–188.

Johnson, V. E. (2003). *College grading: A national crisis in undergraduate education*. New York: Springer-Verlag.

Jones, J. E., & Bearley, W. L. (1996). *360-degree feedback: Strategies, tactics, and techniques for developing leaders*. Amherst, MA: Human Resource Development Press.

Jost, K. (2002). Grade inflation. *CQ Researcher, 12*(22), 505–520.

Kanagaretnam, K., Mathieu, R., & Thevaranjan, A. (2003). An economic analysis of the use of student evaluations: Implications for universities. *Managerial and Decision Economics, 24*(1), 1–13.

Krautmann, A. C., & Sander, W. (1999). Grades and student evaluations of teachers. *Economics of Education Review, 18*(1), 59–63.

L'Hommedieu, R., Menges, R. J., & Brinko, K. T. (1990). Methodological explanations for the modest effects of feedback from student ratings. *Journal of Educational Psychology, 82*(2), 232–241.

Mabry, L. (1999, July). *Evaluation of teaching.* Paper presented at the 9th Biennial Conference of the International Study Association in Teachers and Teaching (ISATT): Teachers & Teaching: Revisioning Policy & Practice for the 21st Century, Dublin, Ireland.

Manhire, B. (2004, June). *Grade inflation, ethics and engineering education.* Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition, June 2004, Salt Lake City, Utah (on CD-ROM – Session 2560).

Mark, S. F. (1982). Faculty evaluation in community college. *Community Junior College Research Quarterly, 6*(2), 167–178.

Marsh, H. W., & Dunkin, M. (1997). Students' evaluations of university teaching: A multidimensional perspective. In R. P. Perry & J. C. Smart (Eds.), *Effective teaching in higher education: Research and practice* (pp. 241–320). New York: Agathon.

Marsh, H. W., & Roche, L. A. (1997). Making students' evaluations of teaching effectiveness effective. *American Psychologist, 52*, 1187–1197.

Marsh, H. W., & Roche, L. A. (1998). *Effects of grading leniency and low workload on students' evaluations of teaching: Popular myth, bias, validity or innocent bystanders*? Manuscript in review.

McKeachie, W. J. (1987). Instructional evaluation: Current issues and possible improvements. *Journal of Higher Education, 58*(3), 344–350.

McKeachie, W. J. (1996). Student ratings of teaching. In J. England, P Hutchings, & W. J. McKeachie (Eds.), *The professional evaluation of teaching* (American Council of Learned Societies. Occasional Paper No. 33; pp. 1–7). New York: American Council of Learned Societies.

Miller, R. I. (1986). A ten year perspective on faculty evaluation. *International Journal of Institutional Management in Higher Education, 10*(2), 162–168.

Moses, I. (1996). Assessment and appraisal of academic staff. *Higher Education Management, 8*(2), 79–86.

Murray, H. G. (1984). The impact of formative and summative evaluation of teaching in North American universities. *Assessment and Evaluation in Higher Education, 9*(2), 117–132.

Naftulin, D. H., & Ware, J. E., Jr. (1973). The Dr. Fox lecture: A paradigm of educational seduction. *Journal of Medical Education, 48*, 630–635.

Ruskai, M. B. (1996). Evaluating student evaluations. *Notices of the American Mathematical Society, 44*(3), 308.

Scriven, M. (1994). Using student ratings in teacher evaluation. *Evaluation Perspectives, 4*(1), 1–4.

Scriven, M. (1995). A unified theory approach to teacher evaluation. *Studies in Educational Evaluation, 21*(2), 111–129.

Seldin, P. (1984). Faculty evaluation: Surveying policy and practices. *Change, 16*(3), 28–33.

Simon, W. E. (1996, March 19). The dumbing down of higher education. *Wall Street Journal*, p. A18.

Sokoloff, D. R., & Thornton, R. K. (1997). Using interactive lecture demonstrations to create an active learning environment. *Physics Teacher, 35*, 340.

Weinberg, B. A., Fleisher, B. M., & Hashimoto, M. (2007). *Evaluating methods for evaluating instruction: The case of higher education* (NBER Working Paper No. 12844). Retrieved from http://www.nber.org/papers/w12844.pdf

Questioning Our Fundamental Assumptions: Scientific Measures of Reliability

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Abstract. Have you every wondered why many phenomena that thousands of people believe in and claim to have experienced cannot be 'proven' by science; phenomena such as effects of the moon on human behaviour, and supernatural and paranormal events such as ESP, remote viewing, and out-of-body experiences. Typically, scientific results of well-designed experiments report correlations that show any such unusual human-contextual interactions are no better than chance, for example "Ivan Kelly, James Rotton and Roger Culver (1996) examined over 100 studies on lunar effects and concluded that the studies have failed to show a reliable and significant correlation (i.e., one not likely due to chance).... If so many studies have failed to prove a significant correlation between the full moon and anything, why do so many people believe in these lunar myths?" (Carroll, 2006). One simple reason that correlation studies show no significant results might not be because there is nothing there to measure but because the assumptions on which correlations are based attribute such unusual human-contextual interactions to randomness. Many users of correlation are unaware of these assumptions and many statisticians rarely question them. It might be said of these experiments that if we repeatedly do something the wrong way we will continue to reliably get the wrong answer. This paper explains very simply, for a non-statistical audience, the random-error assumption of classical test theory that is used to scientifically measure reliability of such phenomena. A study of 1,331 Grade 9 children in 43 Jamaican schools is presented to demonstrate that classic correlational measures of reliability do not recognize unusual but reliable human-contextual interactions recorded by these children. A simple alternative constructivist correlational measure is demonstrated, which is sensitive to such unusual but reliable human-contextual interactions. The significance of this paper is that it is fundamental to correlation studies in education, particularly in non-standard Caribbean populations.

Introduction

This paper uses a constructivist perspective to question the fundamental positivistic assumption of the classical "true-score +error variance" model ubiquitously applied to the interpretation of questionnaire responses and test responses. It empirically demonstrates constructivist/classical differences in prediction and tests hypotheses substantiating four major concerns about the continued use of the positivistic interpretation of test responses.

The classical model of measurement is universally used in education and psychology for assessing subjects' responses to personality tests, educational tests, aptitude tests, and ability tests. It assumes that each person has a "true score" and that their actual score varies from their true score by some error. The terminology *true score* is variously described in the literature as a Platonic true score (Lord & Novick, 1968), which is the subject's error free score on the hypothetical construct being measured, and empirically as the average of the subject's responses to a test, and also as a limit of all possible such mean scores on parallel or alternative equivalent tests.

This terminology has been referred to as a "mistake" (Borsboom & Mellenbergh 2002, p. 508), in that it misleadingly appears to refer to the positivist concept of a true score on the construct being measured—perhaps this was the original idea. However, Lord and Novick (1968) later wrote that such an interpretation would lead to confusion between the concepts of *validity* and *reliability* and strictly defined *true score* empirically as the actual average of a subject's responses on a test. Hence, as the true score is only the subject's mean score, it can actually vary with each alternative form of a test and with each occasion on which the subject is tested. As Wilson (1998) points out, there is no reason to believe that alternative forms of a test given on different occasions would reduce variability to some limit, but that it is likely to increase variability:

> However, this (assumption that alternative testing reduces variability) has produced a

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contradiction with the notion of the true score that has not been made overt. For example, as described in Chapter 16, most achievement tests are not made more valid by increasing their reliability; on the contrary high reliability is seen to be, in most circumstances, an indicator of low validity. For most achievement areas involve a large number of disparate activities, and there is no a-priori, or even post empirical reason to believe that these activities are uni-dimensional, or otherwise closely inter-correlated.

I argue in Chapter 15 generalising the assessment events across contexts, or time, or media, or even value assumptions or frames of reference, does not (as does generalising across selection of test items or markers), reduce the standard error of the estimate; on the contrary, we have every reason to believe that it will increase such error, to a point where the whole notion of true score becomes unsustainable. After all it is not by chance that so much space is given in test manuals to ensuring the conditions under which the test is given are kept constant. Obviously this indicates the fragility of the test to contextual shifts. (On second thoughts, it could be as much a ritual designed to imply scientific accuracy, and sustain the notion of fairness.) Regardless, it is clear that contextual shifts increase the error term, whilst contextual control artificially reduces it; artificially because no argument is ever given, nor could it be sustained, that this particular test context is superior to any other to the measurement of this "ability." So once again the price of higher reliability is lower validity. (Chapter 15)

Further, empirical true score need not be connected to any hypothetical construct. For example, it is possible to perversely construct a test that corresponds to no known construct by collecting a random selection of tests and using one random item from each of those tests. A subject's true score on such a test would then not correspond to his or her score on any known construct. The tempting interpretation of the term *true score* as representing a positivistic "construct score" is referred to in the literature as Platonic true score interpretation (Lord & Novick, 1968; Lumsden, 1976; Sutcliffe, 1965). In a book (Borsboom, 2007) and an earlier paper (Borsboom & Mellenbergh, 2002), Borsboom and Mellenbergh severely took to task Schmidt and Hunter (1999) for assuming the Platonic true score interpretation. This positivist interpretation is referred to as "Platonic" because it is inherited from Plato's distinction of Form and Matter, which he described by analogy to the flickering shadows of "vessels" on a cave wall. We cannot see the real vessels, which are the Form. We can only see their flickering shadows, the Matter (Plato, Republic, trans. by Tom Griffith. Cambridge: Cambridge University Press, 2000). From watching these changing flickering shadows, which correspond to variations of matter, we try to generalize what the real vessels are like. This analogy describes the idea of sampling. Each response on a questionnaire measuring some construct is analogous to a matter sample, like one snapshot of the flickering shadows of true score plus its flickering error. By superimposing many such samples we try to identify the non-moving part of the flickering shadows, which corresponds to the true score.

In classical test theory, we make assumptions to make our lives statistically easier. We assume that the errors flicker back and forth around the true value, that is, they are normally distributed about the true mean, with the same variation. This allows us to "superimpose the shadows" by summation, so that the positive and negative errors that flicker equally around the mean will cancel out in the addition. This process of summing to cancel out the "flickering errors" is analogous to Magnusson's (1966) description of deriving the true score from many parallel tests, namely, "The greater number of parallel tests we administer, the greater the chances are that the random errors will cancel each other out. The sum of the error scores will be zero for an infinite number of parallel tests" (p. 64). This is a reasonable assumption when the vessels stay a constant distance from the wall, but it doesn't work when the vessels come closer or go further from the wall so that their shadows change size, that is, when some of the questions measure larger or smaller amounts of the construct. For example, the error in estimating one

centimetre is likely to be much less that the error in estimating one kilometre. However, for convenience, their variation is assumed to be the same; or, as implied by Wilson (1998) above, when the tests do not meet the uni-dimensional ideal of being truly parallel.

Background

Other researchers have questioned the classical theory from the assumption that a subject's cognitive appraisal of a construct remains the same over time, particularly in cases where the values on which personal appraisal are based interact with the construct being measured, as in Quality of Life Questionnaires. For example, Schwartz and Rapkin (2004) identified a shift over time in how their respondents appraised Quality of Life (QOL) questions that corresponded to changes in their Quality of Life values, so that over time their test-retest responses varied. This is known as "response shift" (Sprangers & Schwartz, 1999) and, as shown later in this paper, can equally well result from a respondent's unique interaction with the context on one particular question. Schwartz and Rapkin explain that:

> 'Response shift' refers to a change attributable to changes in the meaning of that construct, as understood or experienced by a respondent. Response shifts can reflect change in the respondent's internal standards of measurement (scale recalibration), change in the respondent's values regarding the relative importance of component domains of QOL (reprioritization), or a redefinition of meaning of QOL itself (reconceptualization). 'Appraisal' refers to the psychological processes involved in rating a QOL item.

This is of importance in the medical literature because response shift masks the treatment impact on patient reported outcomes (Ring, Höfer, Heuston, Harris, & O'Boyle, 2005). Schwartz and Rapkin (2004) go on to argue the inadequacy of true score psychometrics in dealing with this phenomenon because the true score model treats these variations as random error:

We argue that the idea of the true score and related psychometric concepts have been misapplied in QOL measurement because QOL phenomena cannot be appropriately understood in the classical nomothetic measurement paradigm. Rather, we contend that critical properties of QOL measurement are overlooked or relegated to error variance because they do not fit within prevailing psychometric models.

This paper questions the classical theory from a constructivist perspective. Sadly, it abandons the security offered by our searches for a true score. It does not accept that there is a true score. It postulates that the true scores do not exist and all we have is what we see—the responses. The constructivist view taken here is that these responses represent the measure of the construct under the time and conditions of the subject's interaction with the question. A different response given at a different time represents a measure of a different value of the construct under the new time and conditions of the subject's interaction with the question. So, for example, the constructivist would not accept the positivist view that a child has one "mathematical ability" that is expressed differently under different conditions. The constructivist would say that each condition evokes a different mathematical ability, in degree and/or kind, which may be judged as more or less appropriate to that condition. This seemingly small and irrelevant philosophical distinction has very significant and practical consequences in application to the measurement of educational and psychological constructs. For example, students tend to perform well on coursework assignments, but poorly on examinations. To a constructionist, this means that students perform well on coursework assignments but poorly on examinations. However, a positivist would assume that there is one true ability score and that these are different samples of that true ability. To remain consistent, the two choices open to the positivist are to average the scores or to choose one result as being truer than the other. In some English-speaking universities, the economic imperatives of "student as customer" have resulted in some course examinations being dropped in favour of coursework assignments being a conveniently truer measure of ability.

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This paper posits the constructivist position that when a subject gives a response, that is a complete indication of the subject's interaction with the question at that time, as opposed to the positivist position that the response is a composite of a true score and a random error. The distinction is clearly visualized in the test-retest case of a perfectly stable responder who gives an extreme response to one question. An illustrative test profile of such a subject, on an 11-item questionnaire (say), is shown in Figure 1. The constructivist retest profile is shown in Figure 2. The chance of such cases occurring is minimized during test development by identifying such questions as "low reliability" and discarding them. However, this condition can still pertain to individuals in an otherwise homogeneous norm group, and becomes prominent as "reduced test reliability" when the test is used with subjects who have values that are different from those of the original norm group—as in the response shift examples cited above. There can be no likely stable positivist retest profile, because this would require a normal random retest response as extreme as that for the test response, which is very unlikely. A positivist retest response on the "extreme" question contains a random component that would very likely be closer to the true score mean, and hence deny that the subject is a stable responder. In other words, the positivist interpretation tends to attribute genuine individual difference, as shown in Figures 1 and 2, to error variance.

Test responses for Subject A

Retest responses for Subject A
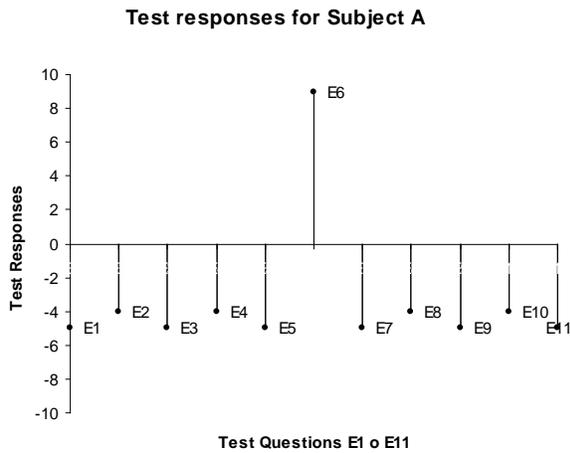
Figure 1. Test responses.
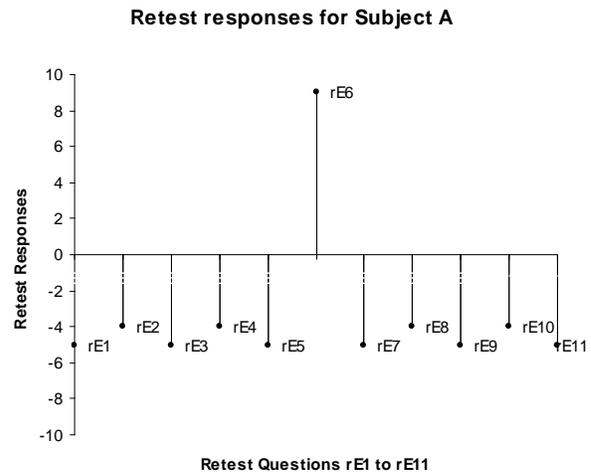
Figure 2. Possible constructivist retest responses of a stable responder.

The positivist description of a test response and a retest response is that each response comprises a true score and an error component. The true score is approximated by the mean of the responses and the error is randomly distributed around this mean. The error components in all responses are assumed to have a common variance. So the responses are seen as samples from a normal distribution whose mean is the true score. Hence, a response that is extremely divergent from the mean is considered to contain the most random error. It follows that, as much of this extreme response is random error, it is unlikely that a retest response to this same question will be as extreme, that is, being random in the extreme. The extreme response is most unlikely to happen again because the more extreme normal random variates are the most unlikely. How unlikely it will be depends on the number of response choices. If the choices are Agree/Disagree then the random chance of a matching retest response can not be more than 1:2. However, if the choices range from Disagree (-9) to Agree (+9), then the probability of choosing the same uniformly random response in a retest would be only 1 in 19. The probability of choosing the same normally random response will depend on the mean and variance of the scores. However, the constructivist description of a test response and a retest response is that each response is a true indication of the subject's interaction with the question at that time. There is no true score and no error. Hence, a test response that is extremely

divergent from the mean shows a strong interaction and so is more likely, rather than less likely, to be repeated in a retest. How likely it is also depends on the stability of the subject's interaction with the questions, and this can be gauged by a correlation matching the subject's test responses with his or her retest responses. These two different expectations of the retest response provide a simple method for testing which is the more plausible of the two interpretations—constructivist or positivist. Matching each subject's extreme response on a test with his/her response to the same question on the retest gives a method of testing the positivist and constructivist interpretations; in that the constructivist interpretation predicts a match, whereas the positivist interpretation predicts no match.

In this paper, we empirically demonstrate these differences in prediction and test hypotheses substantiating each of the following assessment concerns about the continued use of the positivistic interpretation of test responses:

1. Inability of the positivist interpretation to account for stable personal interactions with individual question contexts.

2. Inability of the positivist interpretation to distinguish between unreliable responses and reliable individual differences.

3. Existence of counter examples to the positivist interpretation.

4. Positivist test development undervalues individual difference.

The methods used are computationally simple, involving no more than correlation, and can be replicated on common test-retest results.

Method

Participants

To test these interpretations, the Caribbean Peer Self-Esteem Scale was administered to 502 boys and 829 girls, aged between 11 years 2 months and 17 years 0 months, with a mean age of 14 years 5 months, in a random sample of 43 schools in Jamaica for which written informed consent had been obtained. The same instrument was re-administered to these same children two weeks later.

Instrument

The Caribbean Peer Self-Esteem Scale was closely modelled on the Hare's Peer Self Esteem Scale. It used the same 10 statements and an additional statement, statement 11: "Lately my friends have been avoiding me." The original yes/no dichotomous response format was extended to a 19-point scale by using a 10-point rating of Agreement or Disagreement, as shown in Figure 3. The instrument was administered by two teachers to each class. These teachers had been trained in the administration of the instrument. Instructions were read to the subjects, who were then guided through the three practice questions, also shown in Figure 3. Approximately 10 minutes were allowed and children who needed help to read the questions were given help in doing so. Subjects responded on the question sheets, which also had space for name, age, and gender. At the end of each session, the sheets were collected and the subjects given a small token in recognition of their participation.

Processing

All negative statements were reverse scored by recoding after data entry.

Hypothesis Tests Substantiating Assessment Concerns

1. *Inability of the positivist interpretation to account for stable personal interactions with individual question contexts*. We tested this using the question with which each subject interacted most differently from their mean response. Two scores were recorded for each subject: (a) the most extreme score on their test and (b) the score for the corresponding question on the retest. This was done by calculating the mean for each subject's test responses. The mean was then used to identify the response most different from that mean. The number of the question that received this extreme test response was also noted. This response was the first score. The second score was the subject's response to this same numbered question in the retest. The "extreme-pair" test-retest correlation

was calculated for the list of these two scores and used as the test statistic. The expected value of this statistic under the positivist interpretation was found by replacing each subject's second score by a "positivist score," derived from the positivist interpretation, and recalculating the correlation (called the positivist test-retest correlation) for comparison with the original extreme-pair test-retest correlation. The positivist score was randomly selected from a normal distribution with the same mean and variance as the subject's retest responses. This second procedure of deriving positivist scores and calculating the positivist test-retest correlation was repeated 60 times to obtain a sampling distribution of expected correlations under the positivist interpretation. A single-sample t-test was then used to test the null hypothesis that the actual extreme-pair test-retest correlation was no different from a positivist test-retest correlation. This gave results (1).

The following sentences are about you. For each sentence (i) If you Agree you are like it says then circle the A. If you Disagree it is like you then circle the D. (ii) Then write a number on the line, from 0 to 9, to show how strongly you agree or disagree.

0-1 means 'slightly agree/disagree'   2-3 means 'agree/disagree a little'

4-5 means 'mostly agree/disagree'   6-7 means 'strongly agree/disagree'

8-9 means 'very strongly agree/disagree'

Practice questions
A D ___ I am tall for my age.   A D ___ I like to play sports.   A D ___ Sometimes I stay late at school

Wait until you are told to start.
There are no right or wrong answers, so give your first best answer and quickly move on to the next question.

A D ___ I have at least as many friends as other people my age

A D ___ I am not as popular as other people my age.

A D ___ In the kinds of things that people my age like to do, I am at least as good as most other people

A D ___ People my age often pick on me.

A D ___ Other people think I am a lot of fun to be with

A D ___ I usually keep to myself because I am not like other people my age.

A D ___ Other people wish that they were like me

A D ___ I wish I were a different kind of person because I'd have more friends.

A D ___ If my group of friends decided to vote for leaders of their group I'd be elected to a high position

A D ___ When things get tough, I am not a person that other people my age would turn to for help.

A D ___ Lately my friends have been avoiding me.

Figure3. Caribbean Peer Self-Esteem Scale was closely modelled on the Hare's Peer Self Esteem Scale.

2. ***Inability of the positivist interpretation to distinguish between unreliable responses and reliable individual differences***. We tested this by observing changes in extreme-pair test-retest correlation and positivist test-retest correlations in increasingly more reliable datasets. It was realized that the difference between the interpretations would be masked by the presence of unstable respondents in the dataset. Hence, the more unstable respondents were identified and deleted from the dataset to see if the resulting difference in extreme-pair test-retest correlation and positivist test-retest correlation became more or less marked. To do this, the response stability of each respondent was measured by the correlation matching his/her responses for the test questions to his/her responses for the retest questions—that is, a subject's responses to test questions 1 to 11 were correlated with his or her retest responses two weeks later to the same questions. Respondents were then sorted from most to least stable, based on these "response-stability correlations." The least stable respondents were identified as those with less than a set lower limit for their response-stability correlations. To exhibit any trend, 15 successively increasing lower limits for the response-stability correlations were chosen by conveniently dividing the range of response-stability correlations, using digit preference, to identify 15 convenient lower limits for stability. For each lower limit, the respondents below that level of stability were deleted from the dataset and the traditional test-retest item correlations calculated as a guide to increasing stability of the dataset. At each of the 15 levels, the two correlations—the extreme-pair test-retest correlation and the positivist test-retest correlation—were also calculated and compared. This gave results (2).

3. ***Existence of counter examples to the positivist interpretation***. A model case for comparing the two interpretations occurs when there is at least one extreme response given by a highly stable test-retest responder. The probability of such an event is calculably extremely low given the positivist interpretation. Hence, any such case

is a counter example to the positivist interpretation, whose probability can be quantified. Response profiles of the most stable responders were checked for the presence of such counter examples and the probability calculated of these cases occurring under the positivist interpretation. This gave results (3).

4. ***Positivist test development undervaluing individual difference***. We tested this by showing that questions recording most individual differences are considered to be most unreliable under the positivist interpretation. It was expected that such diverse individual responses as the above counter examples might be interpreted by the positivist as error variance, in that questions that receive more ratings extremely different from each subject's mean would have a reduced item-total correlation, and so be most likely to be dropped during the questionnaire piloting process. Hence, we tested whether the questions that frequently received the subjects' extreme responses might be considered by the positivist as the more unreliable questions. To test this, the correlation was calculated between the frequency with which a question received an extreme response and its reliability, as measured by its corrected item-total correlation. This gave results (4).

Results

Descriptive statistics for the test and retest of The Caribbean Peer Self-Esteem Scale are shown in Table 1. The C-alpha for the test was 0.6017. The retest had a similar C-alpha of 0.6176. The traditional test-retest correlation for the complete dataset was $r=0.625$ ($p=3.68e-145<<0.05$, $N=1331$).

Table 2 illustrates an example of processing test and retest responses to find the extreme-pair of test-retest responses, a positivistic score, and the response-stability correlation for a single subject, Subject Code #627.

Table 1.

Descriptive Statistics

	N	Minimum	Maximum	Mean		Std.
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Test totals	1331	-79	97	28.89	.81	29.429
Retest totals	1331	-87	98	32.18	.84	30.566

Table 2.
Processing Example for Subject Code #627
Test

Test question	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	Mean
Test Response	8	-8	8	3	6	-6	-3	-9	-5	-8	-9	-2.091
Response-mean	10	-6	10	5	8	-4	-1	-7	-3	-5.9	-6.9	

Extreem Test response   **8**
Extreem Test question   **E1**

Retest

Retest question	rE1	rE2	rE3	rE4	rE5	rE6	rE7	rE8	rE9	rE10	rE11	Mean	Std	RanNorm
Retest Response	9	-8	8	2	9	-6	-2	-9	-5	-8	-9	-1.727	7.085	-3.500

Corresponding retest response   **9**

Summary

Test-retest 'extreme-pair'	**8, 9**
Positivist score	**- 3.5**
Response-stability correlation	**0.9919**

Results (1)

The first row of Table 5 shows that the extreme-pair correlation for the whole dataset was r=0.3751 (p=1.01e-045<<0.05). This compared with the much lower positivist test-retest correlation of r= -0.0972 (p=0.0004<0.05).

Sixty sets of normal random positivist scores were generated using the mean and standard deviation of each subject's retest scores and the positivist test-retest correlation calculated for each set. Table 3 shows these are all of the same order as the initial positivist test-retest correlation of r= -0.0972 given in Table 5. This is because the second positivist response was likely to be closer to the mean of the subject's retest responses— lower than an original high response and higher than an original low response—rather than matching the subject's actual second response, which tended to be more extreme like their first extreme test response.

This distribution had a mean of -0.0872 and a std of 0.0217. The K-S statistic of 0.893 showed

that it was normal (p=0.4030>0.05). The results of a single sample t-test of whether the extreme-pair correlation for the whole dataset of r=0.3751 could have come from this sample data set is given in Table 4 and is rejected (p=2.190e-080<<0.05, on 59df). Hence, it was concluded that the positivist interpretation must be rejected.

Results (2)

Table 5 shows that over 15 iterations, as the dataset shrunk from N=1331 to N=98 by successively discarding the least stable responders—those with the lowest response-stability correlations—the remaining datasets become more stable with the traditional test-retest correlation (TT-RC) increasing as expected towards r=1.0. The extreme-pair test-retest correlation (E-PT-RC) also increased monotonically to 1.0, and was always less that the test-retest correlation, which, being a correlation of averages, overestimates the average of subjects' test-retest correlations. However, the positivist

test-retest correlation (PT-RC) remained at its low approximately constant value of -0.1 despite the increasing reliability of the dataset. These trends can be readily appreciated in Figure 4. In particular, the increasing stability seemed to have no effect on the positivist test-retest correlation. This showed that the constructivist interpretation

was responsive to the increased stability of the datasets as expected, but that the positivist interpretation was not responsive to the increased stability of the datasets as it should have been.

Table 3

Iteration	Pos corr	Iteration	Pos corr	Iteration	Pos corr	Iteration	Pos corr
1	-0.0888	16	-0.1049	31	-0.0755	46	-0.1021
2	-0.1199	17	-0.0689	32	-0.0908	47	-0.0700
3	-0.0716	18	-0.0758	33	-0.0887	48	-0.0856
4	-0.0330	19	-0.0573	34	-0.1228	49	-0.0771
5	-0.0949	20	-0.0624	35	-0.0893	50	-0.1023
6	-0.0719	21	-0.1376	36	-0.0865	51	-0.1066
7	-0.0882	22	-0.1030	37	-0.0946	52	-0.1141
8	-0.0888	23	-0.0576	38	-0.1427	53	-0.0683
9	-0.0741	24	-0.0952	39	-0.0559	54	-0.0677
10	-0.0919	25	-0.0895	40	-0.0644	55	-0.0993
11	-0.0557	26	-0.0771	41	-0.1307	56	-0.0926
12	-0.0718	27	-0.0433	42	-0.0946	57	-0.0946
13	-0.0859	28	-0.0753	43	-0.0934	58	-0.1247
14	-0.0898	29	-0.0814	44	-0.0793	59	-0.0763
15	-0.0885	30	-0.1157	45	-0.0832	60	-0.0956

Table 4.

One-Sample Test

	Test Value = 0.375094745					
					99.9% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
POSCOR Test Extr - Retest RanNorm Correlations	-165.358	59	.000	-.462250	-.471931	-.452569

Table 5

| Iteration #	Minimum response-stability correlation	N Size of Dataset	Extreme-pair test-retest correlation	Positivist test-retest correlation	Traditional test-retest correlation
Key	MR-SC	N	E-PT-RC	PT-RC	TT-RC
1	-0.779	1331	0.375	-0.097	0.625
2	-0.400	1310	0.383	-0.101	0.630
3	-0.298	1286	0.404	-0.103	0.632
4	-0.200	1245	0.426	-0.104	0.625
5	-0.100	1188	0.459	-0.105	0.636
6	0.001	1114	0.481	-0.103	0.649
7	0.101	1040	0.503	-0.111	0.671
8	0.200	952	0.545	-0.100	0.663
9	0.302	849	0.595	-0.079	0.675
10	0.401	740	0.600	-0.107	0.705
11	0.501	622	0.663	-0.090	0.722
12	0.600	466	0.752	-0.061	0.770
13	0.700	319	0.824	-0.057	0.830
14	0.800	196	0.854	-0.055	0.907
15	0.903	98	0.926	-0.135	0.965
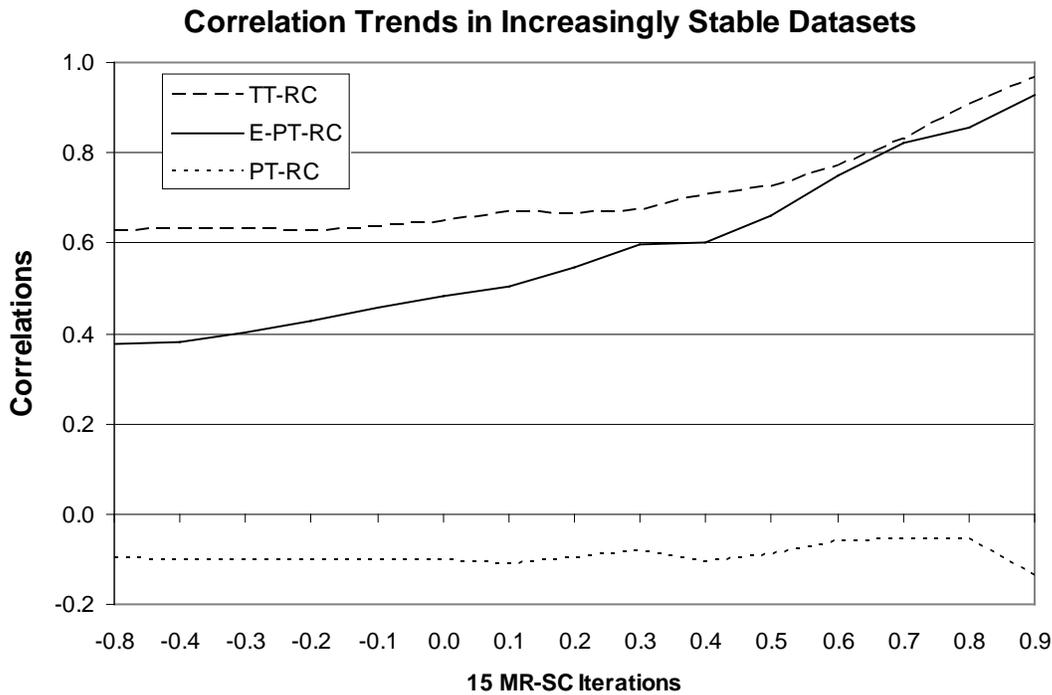
Figure 4.

Results (3)

The following two case profiles are counter examples to the positivist interpretation of test scores. The first profile shows, in Figures 5 and 6, the test and retest responses of Subject coded #438. Her name is Thobourne, and she was a 15 year 3 month-old girl with a high Peer Self-Esteem mean score of 6.67, which put her at the 94th

percentile of Jamaican children. Thobourne was a highly stable responder with a response-stability correlation of r=0.9685. Although she had a consistently high and stable Peer Self-Esteem, she consistently scored low on question 2 "A D ___ I am not as popular as other people my age," a reverse scored statement. Although her Self Esteem was otherwise high, she consistently felt she was not as popular as her peers.

Test Profile Subject Code #438
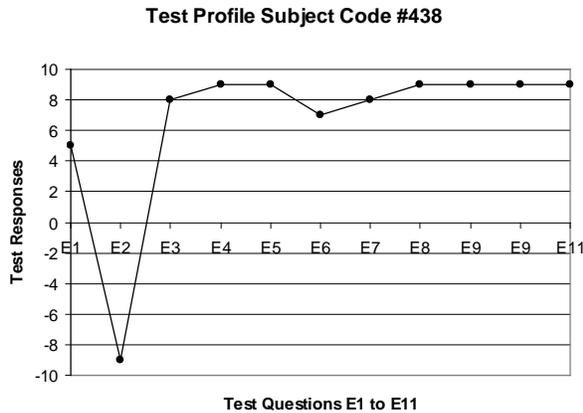
Figure 5. Test profile subject coded #438.

Retest Profile Subject Code #438
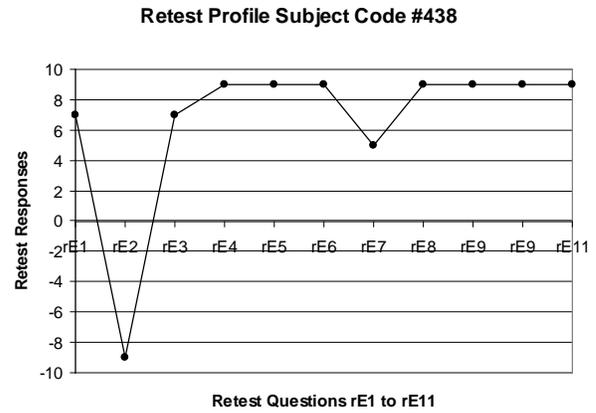
Figure 6. Retest profile subject coded #438.

Nickeisha was Subject coded #579. She was just 1 month younger than Thobourne, and attended a different school. She was not such a stable responder as Thobourne, with a lower

response-stability correlation of r=0.8740. The mean of her test and retest scores put her at the same percentile as Thobourne. Her profiles are shown in Figures 7 and 8.

Test Profile Subject Code #579
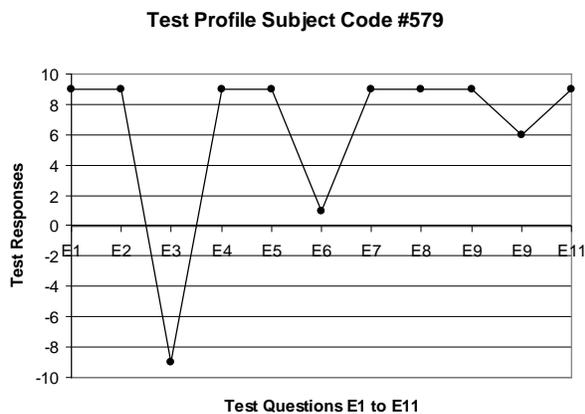
Figure 7. Test profile subject coded #579.

Retest Profile Subject Code #579
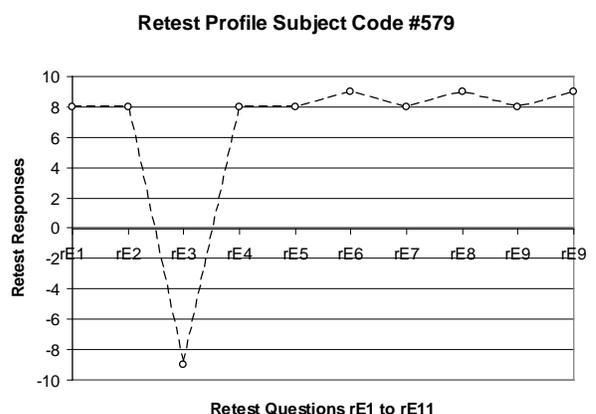
Figure 8. Retest profile subject coded #579.

It can be seen that her slight instability was related to Statement E6 which she was able to endorse more strongly on the retest. Statement 6 is "A D ___ Other people wish that they were like

me." Nickeisha's stable extreme score was on Statement E3, "A D ___ In the kinds of things that people my age like to do, I am at least as good as most other people." Although she had a high Peer

Self-Esteem, she consistently disagreed strongly with this statement.

Table 6 shows the retest responses for both subjects #438 and #579, with the extreme responses in bold. The means and standard deviations of the 10 non-extreme responses are also given. From these means and standard deviations, the probabilities are calculated of obtaining a normal random response as extreme as the actual result given. These results are minute probabilities showing that these cases can be considered as counter examples to the positivist interpretation.

Table 6. Probabilities of Positivist Responses as Extreme as the Stable Extreme Retest Responses

| Questions	rE1	rE2	rE3	rE4	rE5	rE6	rE7	rE8	rE9	rE9	rE11	Mean	Std	NormProb
Code #438	7	**-9**	7	9	9	9	5	9	9	9	9	8.2	1.33	9.663E-39
Code #579	8	8	**-9**	8	8	9	8	9	8	9	9	8.4	0.49	1.31E-276

Results (4)

Table 7 shows the frequency with which a test question received the response most extreme from the subject's mean test response. It also shows the true score reliability of each test question in terms of its corrected item-total correlation. The correlation between the frequency with which the question was chosen and its reliability was r=-0.3514 (p=0.289>0.05, n=11, r2=0.123). This shows a negative, but insignificant correlation with an effect size of 12%, indicating that the questions receiving more extreme responses tended to be considered as more unreliable by the traditional true-score calculation, as expected.

Table 7

Q#	Frequency of most extreme response	Percent	Corrected Item-total Correlation
E1	138	10.37	0.2069
E2	249	18.71	0.2620
E3	155	11.65	0.1343
E4	107	8.04	0.3375
E5	60	4.51	0.2987
E6	214	16.08	0.2836
E7	115	8.64	0.1991
E8	55	4.13	0.3435
E9	72	5.41	0.3261
E10	97	7.29	0.2889
E11	69	5.18	0.2465
Total	1331	100	

Conclusion

This paper has criticized the positivist true score interpretation of test responses as it is ubiquitously used in educational and psychological assessment. The positivist view is that each response is composed of a true score and random error normally distributed about the true score. Empirically, the true score is defined as the mean of the test responses. The link from the empirical mean true score to the Platonic true score, which corresponds to the construct score, is made by infinitely extending the empirical definition to a limit that is assumed would be reached by

including all responses that could be made by an "unchanging" subject on all "alternate/parallel/equivalent tests." These ideal conditions are extremely unlikely to occur in practice. The constructivist interpretation, on the other hand, treats the response as indicating only the interaction of the subject with the test question at the time and in the context of the test. This paper does not criticize the circular definitions of terms required by the Platonic true score. It criticizes the positivistic empirical mean true score interpretation for undervaluing individual differences by attributing stable individual differences to error variance. It was proposed that this happens because the positivist interpretation cannot distinguish between unreliable individual responses and reliable individual responses that are different from its mean true score. This paper was able to test the plausibility of the positivist versus the constructivist interpretation in a test-retest context because, in the test-retest context, the two interpretations make different predictions regarding those responses that are very different from the subject's mean response. The positivist interpretation of a test response that is extremely different from the mean is that it has a large random component and, therefore, is unlikely to be reproduced in a retest situation. The constructivist interpretation, on the other hand, is that such an extreme response indicates an extreme interaction and, therefore, particularly for reliably stable responders, is more likely to be reproduced in the retest situation. These different predictions allowed four tests of the positivist interpretation. The tests were carried out using the test-retest responses to the Caribbean Peer Self-Esteem Scale administered to 502 boys and 829 girls, mean age of 14 years 5 months, in a random sample of 43 schools in Jamaica. C-alphas of 0.6017 and 0.6176 for the test and retest, with an $r=0.625$ test-retest reliability, indicated that the data likely contained a range of stable and less stable responders.

The results substantiated the following four assessment concerns:

1. *Inability of the positivist interpretation to account for stable personal interactions with individual question contexts*. The first hypothesis tested whether the actual extreme-pair correlation could have arisen under the positivist interpretation. For each subject, the test response most different from the subject's test mean was paired with the retest response on the matching retest question, and the extreme-pair correlation $r=0.3751$ was calculated. To test whether this correlation could have arisen under the positivist interpretation, new positivist scores were generated to replace each subject's corresponding retest score. As required by the positivist interpretation, each replacement score was chosen at random from a normal distribution with the same true score mean and standard deviation as the subject's retest responses. Using the same test response, but now with the new positivist score as the corresponding retest response, an expected positivist test-retest correlation was calculated for comparison. This was repeated 60 times to get a sample of expected positivist test-retest correlations against which to test the actual extreme-pair correlation. The t-test showed that the probability of the actual extreme-pair correlation arising under the positivist interpretation was only 2.190e-80. Hence, it is extremely unlikely that these test-retest responses could have arisen under the positivist true score interpretation.

2. *Inability of the positivist interpretation to distinguish between unreliable responses and reliable individual differences*. As mentioned above, it was proposed that the problem with the true score interpretation lies in its inability to distinguish between subject's unreliable responses and reliable individual differences from the subject's mean response. To test this proposal, we looked at how responsive the positivist test-retest correlation was to increasingly reliable data as compared with the actual extreme-pair correlation. We did this by using the response-stability correlation of a subject's test-retest responses to differentiate stable responders from unreliable responders. First, the response-stability correlation for each subject was calculated by correlating his or her test and retest responses. Then, using their response-stability correlations, subjects were sorted from most stable responder ($r=0.997$) to least stable responder ($r=0.779$). The traditional test-retest

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correlation was calculated as the traditional indicator of the reliability of the dataset. The dataset was then reduced in 14 stages by deleting subjects whose response-stability correlations were less than -0.4, -0.3, -0.2, -0.1, 0.0, 0.1, 0.2, 0.30, 0.4, 0.5, 0.6, 0.7, 0.8, and 0.9. At each stage, the traditional test-retest correlation and both the actual extreme-pair correlation and the positivist test-retest correlation were also calculated and compared. The results showed that as the dataset became more reliable, as indicated by the test-retest correlation increasing monotonically towards r=1.0, the extreme-pair correlation also responded by increasing monotonically towards r=1.0. However, the positivist test-retest correlation did not respond to the increasing individual reliability, but fluctuated near the r=-01 level of the original dataset.

The positivist assumption is that higher response-stability subjects have responses that contain less random error, that is, their response variability is reduced because their responses are closer to their mean true score response. This would imply a negative correlation between subjects' response-stability correlations and the standard deviation of their responses. However, for the complete dataset this correlation was only r= 0.0516 (r2=0.0027), indicating that higher response-stability is not only due to reduced variability towards the true score mean. Some subjects with response-stability correlations higher that r=0.98 had standard deviations of the order 7.2 to 8.5 in their responses, showing that they had test responses that varied from the mean but were stable from test to retest. Such an effect would be more common in populations of extreme responders (Hamilton, 1968; Johnson, Kulesa, Cho, & Shavitt, 2005).

3. *Existence of counter examples to the positivist interpretation*. Figures 1 and 2 illustrated a counter example to the positivist interpretation. Under the positivist interpretation, it is extremely unlikely that a test result extremely different from the mean could be reproduced on a retest. This is because the mean true score response is defined in relation to a normal random error

about the mean of all responses, rather than being predicted directly from the one corresponding test response. Two such counter examples were exhibited and the probabilities of the matching retest result calculated under the positivist assumption that it was normal random about the true score with random error of the same variance as the other responses. These probabilities were so low (9.66E-39, 1.31E-276) as to confirm these as counter examples to the positivist interpretation.

4. *Positivist test development undervalues individual difference*. It is because the positivist interpretation cannot distinguish between unreliable individual responses and reliable individual responses which are different from its mean true-score that it treats both as unreliable. It was therefore posited that reliable individual responses that are different from its mean true score would lower the positivistic reliability of questions on which they occurred. As these questions with lower reliability are the first to be excluded in conventional positivist test development, it seems that positivist test development likely under-represents individual differences. This was tested by correlating the number of extreme responses on each question with that question's corrected item-total correlation as a measure of its positivist reliability. The resulting correlation of r=-0.3514 (r2=0.123) indicated that, indeed, the questions on which individuals recorded their responses most different from their means tended to be positivistically interrupted as the least reliable questions.

The paper has demonstrated that the classical empirical mean true score interpretation of test responses treats individual constructivist differences to question contexts as random errors. As Schwartz and Rapkin (2004) conclude, "we contend that critical properties of QOL measurement are overlooked or relegated to error variance because they do not fit within prevailing psychometric models." When this routinely occurs during questionnaire and test development, those questions recording individual diversity receive low item-total correlations and are dropped from the test. This process of positivist interpretation,

which is common in test and questionnaire development, reduces recognition of individual diversity by interpreting it as error variance. It is therefore recommended that test development and analyses that wish to preserve these individual differences base calculations at the subject level, on subjects' actual interaction response with each question, rather than on subjects' so-called mean true score response at the test level or subjects' mean true score response at the question level. For example, to calculate the stability of responses to a test (test-retest reliability), a constructivist approach would simply "average" the correlations between each subject's test and retest responses, rather than correlate the averages of each subject's test and retest responses, that is, average correlations rather than correlate averages. We started this paper by wondering why statistical analysis repeatedly shows that occurrences of unusual human-contextual interactions, like the influence of the moon on human behaviour, are no better than chance. We have seen that the process of true score calculation attributes such events to random error. To study the effects of the moon on human behaviour, the positivist looks at daily or weekly occurrences of likely events, such as traffic accidents and hospital admittances, to see if the averages for these events fluctuate with the phases the moon, and the events do not fluctuate significantly. The constructivist would test the data from the perspective of the individual's interaction with the event, questioning for those individuals who have had more than one traffic accident or who have been admitted to hospital more than once, whether these interactions tended to happen at the same time of the lunar cycle for that individual.

We realize why, if a true score did not exist, it would be necessary to invent it. The devilish problem is that, like Voltaire's counterpart, the positivist true score interpretation continues to attribute genuine stable individual differences to error variance.

References

Borsboom, D. (2007). *Measuring the mind: Conceptual issues in contemporary psychometrics*. New York: Cambridge University Press.

Borsboom, D., & Mellenbergh, G. J. (2002). True scores, latent variables, and constructs — A comment on Schmidt and Hunter. *Intelligence, 30*(6), 505–514.

Carroll, R. T. (2006). *Full moon and lunar effects*. In *The skeptic's dictionary: A collection of strange beliefs, amusing deceptions, and dangerous delusions*. Retrieved from http://www.skepdic.com/fullmoon.html.

Hamilton. D. L. (1968). Personality attributes associated with extreme response style. *Psychological Bulletin, 69*, 192–203.

Johnson, T., Kulesa, P., Cho, Y. I., & Shavitt, S. (2005). The relation between culture and response styles: Evidence from 19 countries. *Journal of Cross-Cultural Psychology, 36*(2), 264–277.

Kelly, I. W., Rotton, J., & Culver, R. (1996). The moon was full and nothing happened: A review of studies on the moon and human behavior and human belief. In J. Nickell, B. Karr, & T. Genoni, (Eds.), *The outer edge*. Amherst, NY: CSICOP.

Lord, F. M., & Novick, M. (1968). *Statistical theories of mental test scores*. Reading, MA: Addison-Wesley.

Lumsden, J. (1976). Test theory. *Annual Review of Psychology, 27*, 251–280.

Magnusson, D. (1966). *Test theory*. Reading, MA: Addison-Wesley

Ring, L., Höfer, S., Heuston, F., Harris, D., & O'Boyle, C. (2005). Response shift masks the treatment impact on patient reported outcomes (PROs): The example of individual quality of life in edentulous patients. *Health and Quality of Life Outcomes, 3*, 55. doi:10.1186/1477-7525-3-55

Schmidt, F. L., & Hunter, J. E. (1999). Theory testing and measurement error. *Intelligence, 27*(3), 183–198.

Schwartz, C. E., & Rapkin, B. D. (2004). Reconsidering the psychometrics of quality of life assessment in light of response shift and appraisal. *Health and Quality of Life Outcome*, *2*, 16. doi:10.1186/1477-7525-2-16.

Sprangers M. A. G., & Schwartz, C. E. (1999). Integrating response shift into health-related quality of life research: A theoretical model. *Social Science and Medicine, 48*(11), 1507–1515.

Sutcliffe, J. P. (1965). A probability model for errors of classification. I. General considerations. *Psychometrika, 30*(1), 73–96.

Wilson, N. (1998). Educational standards and the problem of error. *Education Policy Analysis Archives, 6*(10). Retreived from http://epaa.asu.edu/epaa/v6n10/.

In the Context of Trinidad and Tobago, How Do We Identify Schools That Are Succeeding or Failing Amidst Exceptionally Challenging Circumstances?

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Abstract. The understanding that some schools face uniquely challenging circumstances represents a groundswell of new research in school improvement and education reform policy. Traditional school improvement theory does not account for variations in school contexts, and some have questioned the applicability of current practice to all schools, especially those in disadvantaged contexts. This leads directly to the core question of this paper: In the context of Trinidad and Tobago, how do we identify schools facing challenge? Answering this question will allow us to address the edifice of inequity strangling schooling outcomes in Latin America and the Caribbean. A critical task is the development of a database of schools with characteristics related to performance and context. This paper describes the protocol and initial data from such a project. Data came from the 2005 and 2006 primary school national achievement tests. A simple measure of school performance, called the Academic Performance Index, was developed, based on the distribution of students in each performance level defined in the national achievement tests. Additional indices were obtained, including disadvantage status and school size. From the database, a short list of high- and low-achieving schools in challenging circumstances was developed.

What Can National Achievement Test Data Tell Us About Quality and Equity?

National achievement tests are large-scale assessments of student learning outcomes. In an ideal world, these assessments are systematic countrywide measures designed to measure levels of achievement in parts of or the whole education system. As a component of a national evaluation system, these achievement tests may be accompanied by a variety of non-cognitive measures, providing information on critical demographic and non-achievement variables, such as student engagement (Greaney & Kellaghan, 1996). Compared with high-stakes public examinations that are so popular in the Anglophone Caribbean, data from national achievement tests are used primarily to monitor achievement standards (Black & Wiliam, 2007).

While some claim that the United Kingdom (UK) has had a national assessment system in place since 1948, in most developing countries, large-scale assessments of this type have been promoted as a result of the resolutions adopted at the World Conference on Education for All (WCEFA) held in Jomtien, Thailand in March 1990 (Greaney & Kellaghan, 2007). Ten years after this event, however, few countries in the Caribbean, apart from St. Lucia and Jamaica, had developed viable national assessment systems (World Bank, 1993). For Trinidad and Tobago, such a deficiency meant that little information was available to monitor or gauge the impact of education reforms. Increasingly, then, external agencies have supported capacity building within this area (World Bank). This is critical for countries like Trinidad and Tobago that lack resources, knowledge, and personnel in the area of education measurement.

Currently, in Trinidad and Tobago, the Division of Educational Research and Evaluation (DERE), a unit in the Ministry of Education, holds the responsibility for administering the system of national achievement testing. Much of the recent improvements is attributed to better resourcing, training, and leadership. Prior to 2004, a

rudimentary system of "national testing" did exist in the form of a centrally designed test distributed to all schools, with teachers expected to score student papers and provide feedback to students. However, this system could not meet all the objectives of a "real" national assessment system and provided little information on national standards. Indeed, the process lacked integrity and purpose and the function of the test remained nebulous.

Consequently, in 2004, the Ministry of Education installed a more efficient, centrally administered national assessment programme. Instruments were developed to measure both achievement and non-achievement variables. The achievement tests in language and mathematics were administered to the entire population of students in Standards 1 and 3, while selected measures of teacher and student attitudes were administered to a sample of schools. Compared to the earlier system, the 2004 reform included centralizing of test development, including item writing, scoring, setting performance standards, data analysis, and reporting.

Although the DERE has proved to be very efficient at managing the current system, it has not developed an ongoing programme of test evaluation, validation, and research (Greaney & Kellaghan, 1996). Perhaps, though, a more significant concern is the lack of an overall policy for appropriate data use. It appears, then, that while a system for national achievement testing has been implemented, a national educational quality evaluation system has not as yet been developed (Olivares, 1996; Wolff, 2004). As a result, the focus has simply been on providing data rather than developing a system of using data to improve schools. Policy for efficient data use from national assessments would include datasets for identifying underperforming schools. These datasets will also allow research into the factors influencing school productivity and school effectiveness. For schools in the Anglophone Caribbean, these areas remain a virtual black box.

Using National Achievement Test Data to Identify Inequality

Appropriate data use is essential to improving education in Latin America and the Caribbean. Perhaps the need for systems to monitor learning outcomes with appropriate data use policies is magnified by the pervasive problem of low quality and high inequality (Winkler, 2000). Latin American countries, led by the UNESCO Regional Office of Education for Latin America and the Caribbean (ORELAC), have been able to develop advanced systems that integrate data with education policy, aimed at reducing achievement gaps (Ferrer, 2006). For example, the oldest national assessment programme found in Chile was implemented as far back as 1978. In 1982, Chile made a first attempt to create a national evaluation system in the short-lived Program for the Evaluation of School Results (PER) (Olivares, 1996). This was followed by SECE *(Sistema de Evaluación de la Calidad de la Educación)* in the years 1985 to 1986.

Both programmes suffered implementation and routinization failure because of lack of awareness and support. SIMCE (Sistema de Medición de la Calidad de la Educación) is a more advanced system, the result of collaboration between the Pontificia Universidad Católica de Chile and the Chilean Ministry of the Education (MINEDUC). The programme is designed to guide decision making at different levels of the school system, using valid reliable data. In the context of this paper, there are two significant aspects of the SIMCE process. The first is the process governing the utilization of results, with information specifically used to help basic schools in the poorer and rural sectors. The second is the role of MINEDUC's Centre for Training, Experimentation and Pedagogical Research, which is an agency charged with the responsibility of coordinating and conducting research on the data.

Two Frameworks for National Achievement Test Data Use

Data from national assessments are likely to be used differently within accountability and compensatory policies. The implementation of systemic results-driven accountability policy has certainly become a worldwide trend (Anderson, 2005). Such accountability systems are built upon objectives, assessments, instructions, resources, and rewards or sanctions, with the general premise that educators are held accountable for student learning. In theory, a workable accountability system must be structured to transform schools,

teachers, and classroom environments. Under such a policy, student learning failures are attributed to weaknesses in programmes and practices. In contrast, a compensatory education policy is designed to provide an efficient mechanism for directing scarce resources to schools and communities in need of help. Winkler (2000) has classified Latin America compensatory policies by (a) type of intervention and (b) targeting mechanism. Interventions may be either supply or demand, and the targeting mechanism may be geographic, group, or self. Compensatory education policies are common in Latin America with notable examples found in Chile and Mexico.

In Chile, the P900 is a *supply, group targeting* policy facilitating a direct link between national achievement test scores and compensatory funding in the form of materials and technical assistance channelled to low-performing schools. Thus, national achievement test scores are the starting point of system diagnosis, leading to a comprehensive strategy for improving the performance of low-achieving schools. Notable interventions include teacher professional development, targeted support for students at risk, pedagogic counselling and guidance, and distribution of educational materials.

Mexico has a *supply side geographic targeting* compensatory education policy called the Program to Abate Educational Lag [PARE] (*Programa Para Abatir el Rezago Educativo*). This is operated by the National Council of Education Promotion [CONAFE] (*Consejo Nacional de Fomento Educativo*). The programme is designed to provide extra resources to schools that enrol disadvantaged students, which now support as many as four million students in preschool and primary education (Shapiro & Trevino-Moreno, 2004). Compared to the P900 programme in Chile, there is a greater focus on curriculum materials and local decision making, which might increase the effectiveness of spending.

The way in which data are used in compensatory and accountability policies presents a significant conflict in philosophical and political values (Benveniste, 2002; McDonnell, 2005). Compared to compensatory policies, an accountability system will increase the stakes associated with national achievement tests. As in Chile, some accountability policies work hand in hand with education markets to encourage competition and choice between schools (Benveniste). Chile's current system combines elements of both accountability and compensatory policies. Whether this might also work in Trinidad and Tobago is a matter for discussion and debate among key stakeholders.

What is clear is that inequality is a significant educational and social issue in the country and in this region (Perry, Arias, Lopez, Maloney, & Serven, 2006; World Bank, 1995). Even with a reduction in poverty, Trinidad and Tobago might find it difficult to further improve its economic situation if it cannot reduce the inequalities in schooling. This is because the link between education and poverty is inescapable, and if the most disadvantaged students cannot receive a high-quality education, that link will become unbreakable (Perry et al.). Without quality education, disadvantaged students cannot escape the poverty that characterizes many disadvantaged communities (Shapiro & Trevino-Moreno, 2004).

Using National Achievement Data for Research

One of the formative approaches to using national achievement test data involves studying schools that face challenging circumstances. The critical question in such studies is what factors and processes lead to underperformance in the particular context. Lessons learnt from such investigations will better help in understanding the process of school improvement. Interest in creating and sustaining improvement in low-performance schools has now become a worldwide trend (Harris, Clarke, James, Gunraj, & James, 2006). Unfortunately, in Trinidad and Tobago, there is still a dearth of local theory on what makes schools effective and an over-reliance on foreign theory. It is difficult to see how strategies fostering success in a school in British Columbia, Canada will work on an urban school in Port of Spain, Trinidad. Even within Trinidad and Tobago, it is unlikely that strategies that work for a high-achieving urban school would translate successfully to a small rural school. Based on the resource-dependency perspective, schools face different and unique environmental conditions and these will influence their success. Critical aspects of the environment include human and physical

resources, and the parent-student-community interface.

Some schools, however, can succeed even when faced with challenge. These schools may succeed because they take into account their environmental constraints or they compensate for them. For example, such schools may provide increased opportunities to learn and employ innovative strategies that facilitate student success. In the United States (US), such schools are described as *high-performance, high-poverty*; and in England and Canada, as successful schools *facing challenging, difficulty, or exceptionally challenging circumstances* (MacBeath et al., 2007; Trimble, 2002). Applying the concept to Trinidad and Tobago, how may situations of challenge be defined?

"Challenge" might relate to school and community characteristics such as rural or inner-city urban environments, school size, and socio-economic status of the pupils and parents. Therefore, the more useful descriptor in this context might be *"complex and challenging."* This descriptor would apply to the constraints experienced by schools in the resource-deficient rural school and in the turbulent inner-city environment. A broader and extended definition of "complex and challenging" might take into consideration these multiple constraints faced by such schools, inclusive of location, pupil mix, parental attitudes, staffing difficulties, and histories of success.

Schools that succeed in these contexts will have developed strategies enabling them to overcome these environmental constraints. Comparing schools that excel with those that fail will further highlight those characteristics that need to improve under condition of challenge. Therefore, a study aimed at (a) understanding the nature of challenging and difficulty circumstances, and (b) determining the elements of success and underperformance under these conditions is a useful research project, which can be done using the current national achievement test database. While the concept of schools facing challenging circumstances is a borrowed descriptor, it is especially useful because it captures the great variation in school performance that exists across administrative regions and communities in Trinidad and Tobago.

Developing an Index to Measure School Performance

The core of the issue was the development of valid and reliable measurement protocols leading to the identification of schools in complex and challenging circumstances. The norm-referenced data of the 2004 national achievement tests were insufficient for this task. What was needed was a single performance index with additional indices measuring the school's disadvantaged nature and other related characteristics (Choi, Goldschmidt, & Yamashiro, 2005). However, it was critical that this index of performance include the substantive and relative components of the performance standards already developed. Thus, the first part of the protocol focused upon making use of the standards-referenced data in the 2005 national achievement tests.

Arguably, compared with a norm-referenced system, a standards-referenced assessment system is better able to provide the kind of data that leads to meaningful and defensible inferences about school performance. The Trinidad and Tobago standards-referenced system included four levels of student performance, with students being judged either as passing (Levels 4 and 3) or failing (Levels 2 and 1). Kane (2001) has defined a performance standard "as a level of performance described in terms of what examinees at a particular level know and can do" (p. 55). Therefore, performance standards are really informed expectations of student proficiency or performance, usually based on the objectives of the curriculum (content standards) and items in the test instruments. These standards allowed a qualitative description of different levels of performance. The different levels of performance may be thought of as the "normative" aspect of the standard. The substantive aspect of the standard is contained in the written descriptive statements of the expected performance (Haertel & Lorie, 2004).

The development of performance standards allowed the construction of a single criterion-referenced index that could be used for judging performance. Since the index was calculated from the entire school population and from the information contained in the performance standards, it incorporated criteria related to the normative and substantive aspects of the standards. Following the California Department of

Education in the US, the index was labelled an academic performance index (API) and was calculated as follows: The start point is the proportion of each level of student found in the school. LEVEL 3 is the proficiency level at which students have met the standards and is therefore given a weight of *1.0. A weight of *1.4 is assigned to LEVEL 4, *0.6 to LEVEL 2, and *0.2 to LEVEL 1. Students included in the roll who do not take the test are assigned a weighting of 0. Thus, the score for each component can vary from 0 to 140. Schools will gain by having many students in LEVEL 4 (Well above standards), but lose if these students are LEVEL 2 (Just below standards) or LEVEL 1 (Well below standards). Compared to international weightings, we chose a weighting of +0.4 based on the definitions of each performance level.

In order to obtain a single index from the four separate achievement tests in the two grades, each component score was combined using a compensatory rather than a conjunctive rule. The logic behind using a compensatory rule was based on the reasoning that students required both numeracy and literacy skills to be successful in the schooling system. Although literacy is more likely to be a problem in areas of challenge and we would expect primary school teachers to spend significantly more time in this area, we reasoned that, in the end, both variables were important and separate proxies of school effectiveness. Thus, using this protocol, the composite score created varies from 0 to 560. As shown in Tables 1 and 2, benchmarks, labels, and a rubric were then developed for standardizing inferences made from the scores.

Table 1. Rubric for Composite API

Range of Composite API Score	LABEL	PROPOSED DESCRIPTION
401–560	EXCELLING	Extremely high proportions of students meeting or exceeding standards in both classes and areas of learning
241–399	MOSTLY EFFECTIVE	Adequate to high proportions of students meeting or exceeding standards in both classes and areas of learning
81–240	ACADEMIC WATCH	Inadequate numbers of students meeting or exceeding standards in one or more classes or areas of learning. Requires immediate attention to specific challenges faced by school.
0–80	ACADEMIC EMERGENCY	Inadequate numbers of students meeting or exceeding in both classes and areas of learning. Requires urgent and immediate intervention at all levels to improve school performance

Table 2. Rubric for Component API

Literacy Standard 1	Literacy Standard 3	Numeracy Standard 1	Numeracy Standard 3	Range of Subject API
EXCEL	EXCEL	EXCEL	EXCEL	140–101
EFFECTIVE	EFFECTIVE	EFFECTIVE	EFFECTIVE	100–61
WATCH	WATCH	WATCH	WATCH	60–21
EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	20–0

Creating Additional Indices

Apart from the API, additional parallel indices of school performance could be generated. One of the more useful was a measure of annual yearly progress, calculated by dividing the API of one year by the API of the previous year. A value above 1.0 suggests some level of improvement.

This measure is useful and is not based on the actual score on the examination, but on the performance standards and distribution of students among the levels. Additional performance indices that might be useful are the number of students who are in Levels 4 and 3. This basically represents the number of students who have satisfactory performances in the assessment.

These additional indices increased the dimensionality of the system and provide a measure of aspects of the school's performance as measured by the performance standards. For example, schools are likely to perform differently on the percentage in Levels 4 and 3 compared with the API because the API includes additional information related to performance of students at "unsatisfactory levels." Thus, although two schools might report the same number of students in the "satisfactory" levels, the API will be very different dependent on the distribution of the students across the last two levels.

Analysing the Database

The initial working database provided only basic indices necessary for an initial analysis of relative school performance. Additional variables would likely be added later on by the DERE. These might include measures of class size, teacher quality, and school engagement. The initial database would allow the identification of schools that succeeded and failed in challenging circumstances. The variables created included the 2005 and 2006 API, an index of Annual Yearly Progress (AYP), individual indices and classifications for each subject area and grade level, total school population, and the percentage of the school population catered for in the school feeding programme. The last figure was submitted to the Ministry of Education by the schools themselves, which made an assessment of the home environments.

Table 3 provides data on the 2005 and 2006 API for the eight educational districts. As shown, overall, the mean API was 255.03 for 2005 and 275.05 for 2006. The Annual Yearly Progress for all schools was 1.106, indicating that the number of schools performing better in 2006 had increased. In terms of the education districts, in 2005, the highest APIs were for Victoria (282.31±77.67) and Caroni (273.93±62.14). Both urban areas have significant variability in API scores (Port of Spain, SD [2005]=93.26) and Victoria (SD[2005]=77.67). In 2005, the regions with the lowest APIs were North Eastern (223.93±69.27), South Eastern (234.31±65.18), and Tobago (222.09±59.48). The relative rankings remained the same in 2006 except for Tobago, where dramatic results were received for a few schools. Although North Eastern is a low-performing district, it reported the largest gains in terms of annual yearly progress.

Table 3. API Characteristics by Districts

Districts	API2005				API2006				AYP	
	Mean	SD	MAX	MIN	Mean	SD	MAX	MIN	Mean	SD
Caroni	273.93	62.14	451	137	291.23	63.95	427	110	1.079	.194
North Eastern	223.93	69.27	432	84	264.17	75.62	432	120	1.230	.318
POS & Environs	243.29	93.26	477	105	257.35	85.52	457	98	1.073	.221
St. George East	269.09	67.83	443	96	283.37	70.85	463	90	1.0725	.214
St. Patrick	265.49	62.85	429	140	283.79	54.99	447	147	1.1082	.259
South Eastern	234.34	65.18	355	115	253.23	68.99	390	113	1.1044	.277
Victoria	282.31	77.67	525	143	293.12	71.29	457	109	1.0147	.335
Tobago	222.09	59.48	375	122	286.68	81.59	465	428	1.3191	.539
Total	255.03	74.97	525	84	275.05	74.53	465	90	1.106	.273

Table 4 provides two additional measures that might impact upon school performance. These are the percentage of students eligible for free school meals and the school population size figures officially published by the Ministry of Education. The free school meals index is a proxy for socio-economic status, a notable factor influencing school performance. School size might also be a significant factor associated with school performance. For example, some studies suggest that smaller schools can provide a more effective learning environment, especially for poor students. It might be that the relationship between SES and school performance is remarkably reduced in

small schools (Colardaci, 2006). This may be related to the increased attendance, reduced dropout, collaborative relationship among staff, and connection with parents and the community (Kelley & Finnigan, 2003). At the same time, there is also evidence that the school size effect is not present in some countries and may be related to teacher quality, with the estimate only significant in low-quality situations.

Table 4. SES and School Size Characteristics by Districts

Districts	SOCIOECONOMIC STATUS				SCHOOL POP			
	Mean	SD	MAX	MIN	Mean	SD	MAX	MIN
Caroni	66.68	23.15	125	24	298.79	207.44	1000	33
North Eastern	85.58	23.07	137	35	192.18	192.09	855	25
POS & Environs	55.08	24.02	97	10	307.35	177.74	850	70
St. George East	59.74	24.21	104	13	333.72	216.97	850	40
St. Patrick	76.43	23.37	153	26	241.15	151.10	667	51
South Eastern	73.46	23.17	104	25	231.21	183.26	693	26
Victoria	71.01	25.10	115	14	272.56	233.98	1277	27
Tobago*								
Total	67.85	25.34	153	10	278.02	202.89	1277	25

*No data for Tobago initially

As shown in Table 4, regions with the highest figures in terms of the free school meals index were North Eastern (85.58±23.07), St. Patrick (76.43±23.37), and South Eastern (73.46±23.17). The maximum score on the measure was recorded at 153 because schools in especially impoverished areas had a tendency to take extra lunches for distribution. In order to accommodate this finding, the reference point for disadvantaged schools was 90% rather than 50% as used in the international literature. In terms of the size of the school population, the largest schools were in St. George East followed by Port of Spain and Environs.

Figures 1 to 3 illustrate the relationship between some of the variables in the database. As shown, there was a small negative correlation between the percentage of free school meals and the single index measure of school performance. The regression line for the scatterplot is in the right direction, with higher values in percentage of students allotted to free school meals related to lower API scores. This proxy measure of socio-economic status explained about 9% of the variance in the API. However, the relationship between the school meal entitlement and the index of annual yearly progress was significantly smaller. School population showed a positive correlation with the API, with 13% of the variance explained. Larger schools tended to perform slightly better, although most primary schools were well under 500.

Pitfalls in the Measurement System

Any single index of school performance will be severely limited by measurement error resulting from a variety of sources. Such weaknesses are unavoidable and mean that, under some conditions, much of the difference in scores might be attributed solely to construct irrelevant variance. Mizala, Romaguera, and Urquiola (2007) noted these weaknesses in their analyses of school quality information in Chile, and identified two critical problems in measuring school performance using national test data:

> The first reflects that students are not randomly assigned to schools, and some institutions may therefore perform better because they enroll "better" children, rather than because they are inherently more productive. This issue, while difficult to address, is well understood.
> The second challenge arises because schools' mean test scores can provide a "noisy" measure of performance—transitory factors might determine that schools that do relatively well one year have a systematic tendency to do

relatively poor the next, even if their underlying productivity remains stable. In such a case, rankings will display substantial volatility and could easily mislead parents and policy makers. (pp. 62-63)
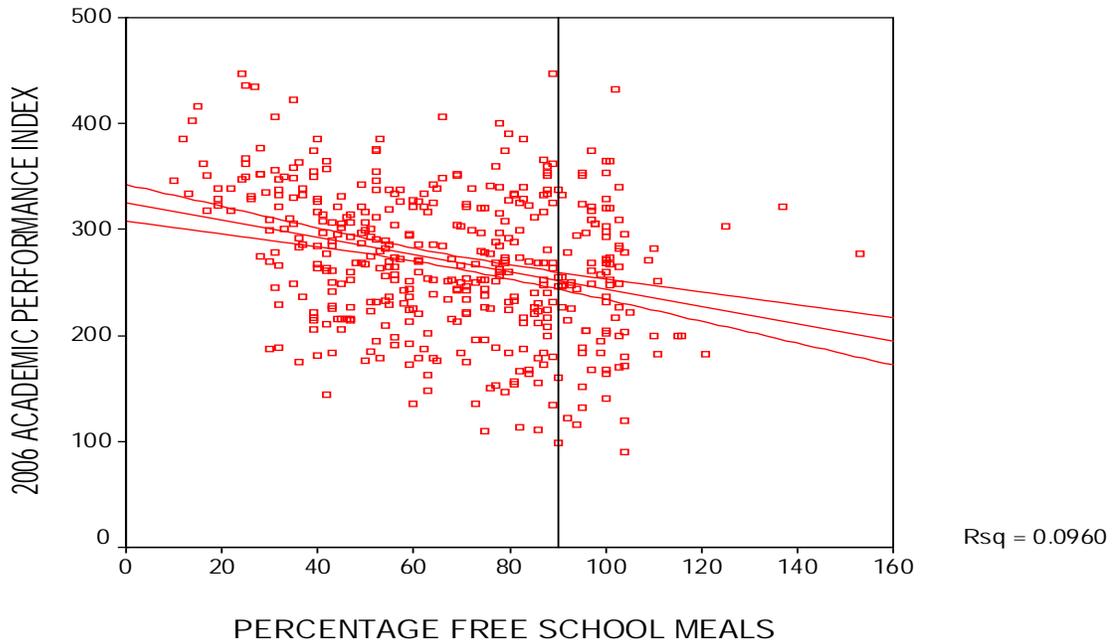

*Figure 1*. The relationship between the academic performance index and the percentage free school meals.
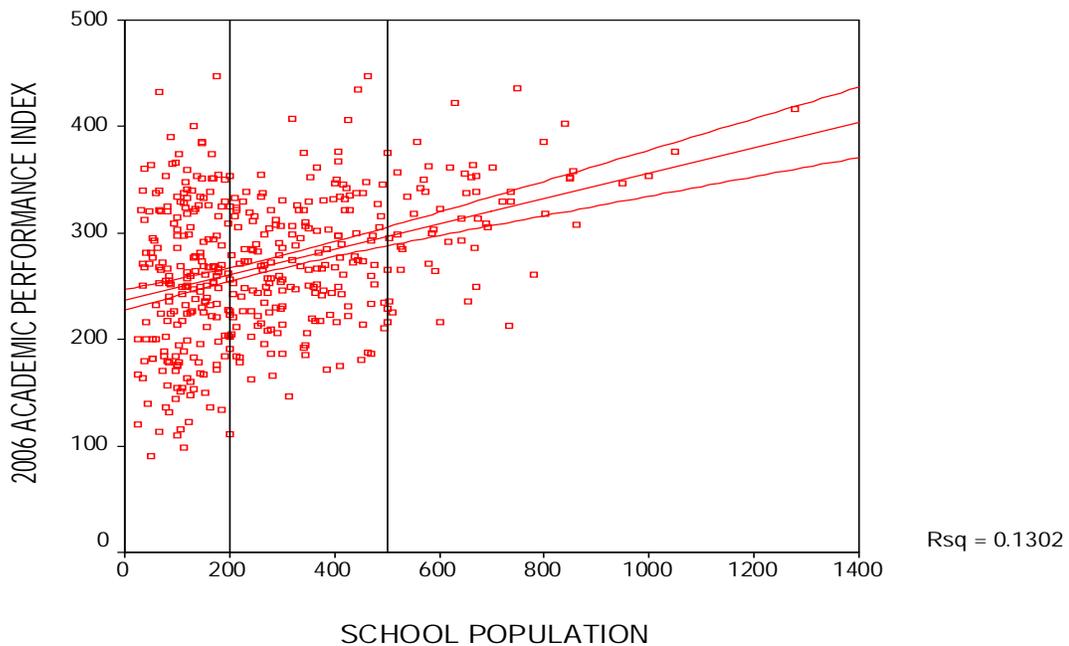
Figure 2. The relationship between the academic performance index and the size of the school.
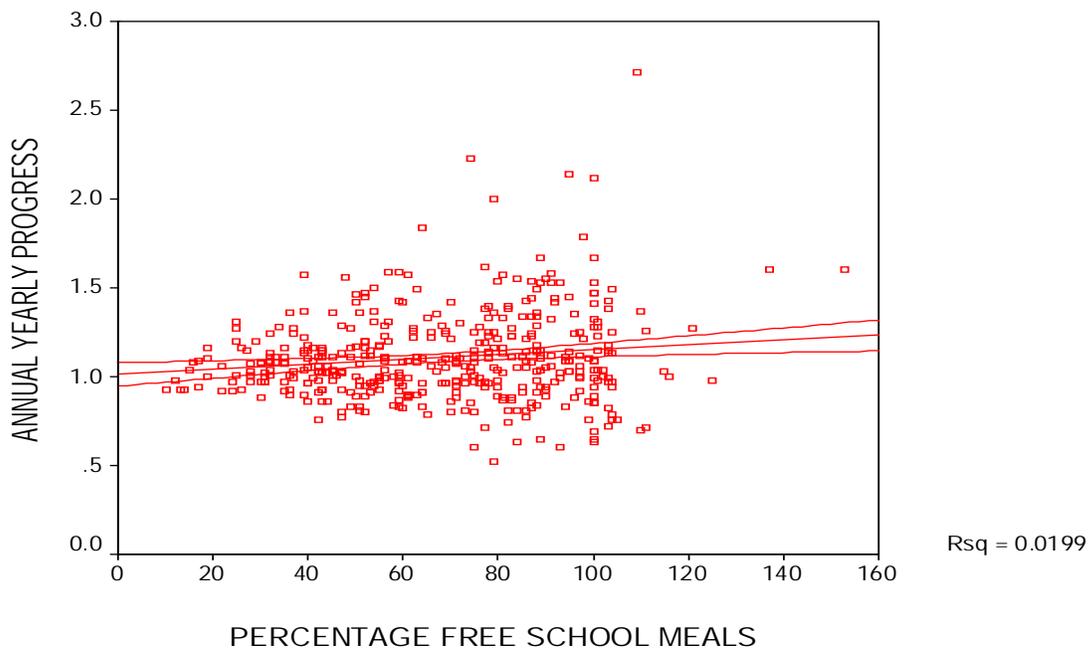
Figure 3. The relationship between the annual yearly progress and the percentage free school meals.

It is possible, however, to reduce the volatility by aggregating three or more years of data, following the principle of multiple measures (Chester, 2005).

The API score is also limited by the quality of the system and procedures used for standard setting, and the procedures used to aggregate the score. Still another caution for developing such an index was that consumers, obsessed by the education market, might use the data to create league tables that rank schools on these purely academic measures. Since there were no large-scale data on non-cognitive measures at the time, such a ranking would skew stakeholders' perception and judgement of schools. Moreover, the creation of such an index might lead to a pseudo-accountability system, perpetuating further competition between schools.

The decision to continue with the process was based on the defensibility of the performance standards and the continued concern over the large variation in performance across schools and educational districts. The country's poor performance in the 2006 PIRLS (Progress in International Reading Literac Study), along with recent data on poverty and deprivation in some rural and urban communities were additional reasons to pursue the issue of the effectiveness of

schools catering for the poor and disadvantaged (Kairi Consultants, 2007; Mullis, Martin, Kennedy, & Foy, 2007). It might be argued that reducing inequity can only be achieved by identifying and helping schools that cater primarily for the poor (World Bank, 1995). Such an approach is essentially compensatory in philosophy.

Beyond the Data: Studying Schools Facing Challenge in Trinidad & Tobago

The study of schools facing challenge has become an important area of study internationally. In the US, much of the research was originally contained under the rubric of high-poverty, high-performing schools. Although definitions vary across US states, a high-performing, high-poverty school is essentially a public school in a poor community making substantial progress, or excelling at its basic mission of teaching children to read, do mathematics, and develop higher-order thinking skills. There is now a growing body of work on schools that excel in difficult and challenging circumstances in the UK and Canada (Chapman, Allen, & Harris, 2004; MacBeath, 2005; McDougall, Gaskell, Flessa, Kugler, & Jang,

2006). Some of this work also includes studies analysing the nature of schools in disadvantaged settings where pupil attainment is high.

van de Grift and Houtveen (2006), in their study of schools in the Netherlands, use the term "underperforming school" to highlight the fact that these schools fail to add value in that students do not perform to the level of their potential. They summarized four current theories that explain underperformance in these school types. These are (1) the theory on opportunities to learn, (2) contingency theory, (3) compensation hypothesis, and (4) additivity hypothesis. Very useful in the context of Trinidad and Tobago may be the failure of schools to compensate for the weaknesses of disadvantaged students, and the fact that there are often limited opportunities to learn in some schools. Contextual factors such as teacher turnover or shortage may also be useful in explaining the performance of rural schools facing challenge in Trinidad and Tobago.

What is notable in all current studies is the acknowledgement that school improvement under these conditions can be slow, and that sustainable success might require approaches different to that in the current literature on effective schools (Muijs, Harris, Chapman, Stoll, & Russ, 2004). This is an important and unique vision of the school effectiveness agenda. Perhaps it is true that in the past, a "one-size fits all" prescription for school improvement was often promoted. Thus, Wrigley (2004) has reminded us that:

> In the 1990s, school improvement was overwhelmingly perceived as being the discovery of generic processes of school change....Improvement requires a far broader understanding of society, schools and education, and a more rounded conception of achievement. (p. 5)

Wrigley (2006) expanded on these ideas and suggested that the recent work on schools facing challenge represents a paradigmatic shift in the conception of school effectiveness and school improvement. He pointed out that:

> School Improvement is too limited in its scope, in its exclusion of curriculum and pedagogy, and in having too instrumental

a view of ethos and the wider community. Its neglect of large bodies of pedagogical and sociological literature have led to a *theoretical* impoverishment, and restricted its ability to think clearly enough about schools in the most challenging *contexts*. These limitations of the paradigm, I would argue, apply to an extent in all schools, but they have become particularly critical where there are high levels of poverty and associated forms of deprivation and educational challenge. (p. 285)

A review of the literature suggests that there have been studies of schools facing challenge, although the framework is not the same as current studies. One of the more significant studies was published by UNESCO in 2002. This study was conducted by the Santiago-based Latin American Laboratory for the Assessment of the Quality of Education (LLECE), and the countries participating in the study were Argentina, Bolivia, Chile, Colombia, Costa Rica, Cuba, and Venezuela. In the study, schools were selected both on criteria that ensured challenging conditions and high performance. The criterion used to select the schools was based on the following operational definition:

> Schools that present the greatest difference between the results of tests in mathematics and the educational level of parents. That is to say…schools in which students whose parents had a low level of education had, nevertheless, good test results in mathematics. (UNESCO, 2002, p. 27)

Thus, the final sample included schools that excelled despite pupils coming from communities and families with educational and, possibly, economic challenge. The framework used for studying the schools focused upon the dual themes of management at the school level and teaching practice at the classroom level. Each of these themes was further broken down as illustrated in Figure 4.

Management at the School Level

1. *Processes related to building a learning environment* within the school, considered as an organization, the objective of which is to foster student development.

2. *The organization of the school, with its actors* (principals, teachers, students), norms, and school decision-making levels.

3. *The particular way of doing things in the school*, its identity as a unit, the way that it is able to structure the learning environment.

4. *Administration and distribution of material, human, and financial resources*, the origin of these resources, their utilization and their quantity.

5. *Characteristics of principals, leadership skills*, relations with the school faculty, and with authorities outside of the school.

6. *Norms of the school as an organization*, school rules and their interpretation by the school community, particularly by those charged with school management.

7. *Academic decision-making models and relevant instances of decision-making*, that is, where decisions are taken regarding the academic life of the school.

8. *Organizational culture*, in terms of the utilization of teaching materials and of school equipment. Particular emphasis placed on relevant curricular learning, ethical programmes, and extra-curricular activities. Thus, analysis of the role and importance that administrative tasks have on day-to-day work by persons responsible for management, and how this exercises an influence on the general academic life of the school.

Teaching Practices at the Classroom Level

1. *Repertory of strategies and action principles* utilized by teachers in order to foster the learning of particular curricular content by their students within the classroom environment.

2. *Management of classroom resources, of the curriculum, and of assigned time* — Class organization and distribution, focus of the curriculum, type of school day, physical condition of the classroom, and number of students per teacher.

3. *Pedagogical perspective*: the set of action principles, attitudes, expectations, ideals, convictions, pedagogical principles, publicly defended by teachers, both individually and as a group within the school.

4. *Level of professional commitment of teachers*, including attribution of the core meaning of their daily activity, level of knowledge, and commitment to the life situation of their students.

5. *Teacher expectations of their students*, with notions concerning performance ability, dispositions, attitudes, and the possibilities of student development.

6. *Material resources for classroom activities* — Teaching, bibliographic, and physical material of the school.

Figure 4. Attributes of two main criteria used to study schools excelling in mathematics.

The study concluded that schools which fitted the criteria tended to have distributive leadership, open climates, involvement of stakeholders, and collegial atmospheres. Students and teachers efficiently used space and time and classroom activity was often collegial. Significantly, the study noted that:

> Pleasure in reading and its emphasis by teachers seems to be a central element in teaching strategies developed in this type of school. Finally, student homework does not always appear to be among the teaching strategies of these schools. Rather, there is a tendency to develop intense classroom activities so that children continue this process outside the classroom, but not as an "assignment." (p. 14)

Locally, an early study conducted by a team at the then Faculty of Education of The University of

the West Indies (UWI), St. Augustine, led by Samuel Lochan (1998), provides insight into the nature of learning within an urban school serving a disadvantaged community. This was an ethnographic study of Bethlehem Boys RC, an inner-city school. This study is significant because it reinforces current international findings that context matters in such situations. The study was conducted over a period of several weeks, using a multimethod approach, including interviews, observation, and document analysis. The findings paint a picture of a school with large class sizes, untrained teachers, streaming, and a real disconnect between school and the community.

Although all the teachers at the school claimed to be doing their best, many were neither trained nor mentally prepared to work in a situation of challenge. For example, most teachers were unfamiliar or uncomfortable with diverse learning styles and the varied development levels of children. While some teachers were occasionally willing to go the extra mile to ensure effective teaching, in many other cases, teachers felt that the effort was too much or little might be gained in terms of their own self-actualization. Further, the school did not have systems to ensure effective pedagogy and lacked support for the instructional system.

The following excerpts from interviews with teachers provide some insight into the dilemma in coping professionally:

Here was a whole different world to me. When I first came, I got an A stream and I managed to cope. Now I have a B stream and at the end of the day I feel as if I have not achieved anything with the children. There are so many varied abilities in here that it is difficult to teach the class....They like activities, materials to touch and hold. I have to get all the materials on my own for a successful lesson. (Teenage Untrained Teacher, Infants Level 1)

They learn better with activity, but I cannot prepare all those things. I do not have the energy....I feel comfortable with all areas of the syllabus. I would like less numbers to teach. Individual attention is hard to give. (36-year-old Trained Level 2 Infants Teacher)

Sometimes you try everything and you cannot get through to them. I just throw up my hands and cool out by the door for a while. I had the B stream last year and I nearly died. I am sorry for that B stream teacher and she is untrained. (25-year-old Trained Level 2 Infants Teacher)

The expressions of these teachers show that there were multiple issues in the school related to pedagogy and training, as well as organization and leadership. For example, although the teachers and the principal focus on the school community, it is clear that the system of tracking and the placement of untrained teachers in the early years of schooling were themselves a hindrance.

These multiple factors, along with a sense of perceived powerlessness, meant that little was done by the school to address the pervasive problem of low achievement. These included multiple barriers to learning such as low levels of literacy, special education needs, and high rates of student absenteeism. As the mathematics facilitator attached to the school noted:

When I got there on Monday there were twenty children, on Tuesday there were nineteen. On average there were always ten children absent.... It took almost four days to get them to use the ruler. Some did not have the coordination to draw a straight line. Their attention span was less than that of an infant class. The reading levels were very poor and some of these children had already spent three years in Infant Level and one year in Standard One. I did a lesson on symmetry which involved folding the paper. The lesson normally works at Infants Level and it was unsuccessful with that Standard Two. (Ministry of Education Mathematics Facilitator)

Developing a Framework for the Proposed Study

What are the elements likely to be different in schools that succeed and fail when facing challenging circumstances? Vegas and Petrow (2008) provided a useful model that can explain the quality of student learning in schools within Latin America and the Caribbean (see Figure 5). Significant elements in the model are the endowments and behaviours of students and schools within the organization and governance of

the school system, and the societal context. A study of schools in difficult circumstances can contribute to the development of policy affecting

the endowments and behaviours of both schools and students.
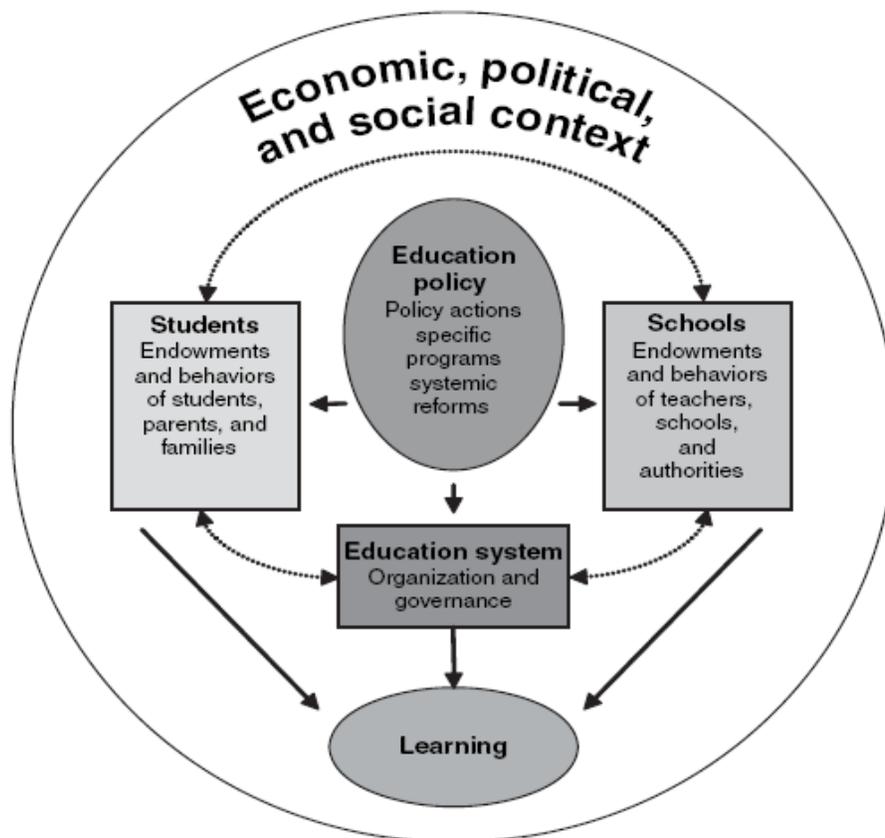
Figure 5. Modelling student achievement in schools facing difficulty: Elements contributing to student learning (Vegas & Petrow, 2008).

Any model explaining school underperformance in Trinidad and Tobago must have the management and organization of the teaching/learning process as a central focus. This is surely evident in Lochan's (1998) study, which highlighted the need to look specifically at the school's instructional systems. The teaching and learning dimension would include activities related to pedagogical approaches such as authentic learning and constructivism. An even more important element might be teachers' beliefs and expectations about students and the learning process. Teacher beliefs include the expectations, understandings, and perceptions related to teaching and learning. These elements are an important but neglected component of

teaching/learning systems. Arguably, they are critical in the context of Trinidad and Tobago, where fatalistic beliefs and stereotypes of the low underachievement of sub-groups are pervasive.

Recent work on the organizational construction of underachievement highlight a number of key variables that might be critical in generating achievement differences in schools facing challenge (Hoy, Sweetland, & Smith, 2002). One of the more important variables in this regard might be collective teacher efficacy (Goddard, Hoy, & Woolfolk, 2000). Collective teacher efficacy is the collective perception of teachers in an institution that they [the teachers] can have on impact on the educational attainment and lives of the children in the school. Parker, Hannah, and

Topping (2006) provided a useful framework for analysing teacher beliefs and perceptions that impinge critically on instructional activity in schools for the poor. Another useful variable is academic press or academic emphasis. This variable measures the extent to which the school emphasizes academic achievement outcomes and foster high achievement standards (Alig-Mielcarek, 2003). School climates with high levels of academic press encourage a variety of instructional strategies, collaborative work, and student learning.

It might be that variables like collective teacher efficacy and academic press are likely to be more important than class and school size in the context of Trinidad and Tobago. These variables will relate directly to the quality and nature of teacher training, as well as the nature of institutional culture and socialization. In terms of the professional socialization offered by the school, a useful collective organizational variable might be organizational citizenship behaviour, which goes beyond teacher workplace commitment to capture the willingness to engage in extra-role activity (Somech & Ron, 2007). In a system with low monitoring and accountability, teachers can choose to "go beyond the call of duty" (display extra-role behaviour). They are also free to define what those areas of extra work might be. Thus, extra-role behaviour and organizational citizenship behaviour may be the fuel that ensures performance in schools facing challenge.

Conclusion

This paper focused on the development of protocols to generate databases based on a single index measure of school performance. The single index measure was created using data from the performance standards established for the primary school national achievement tests. This single index of school performance, along with proxy measures of school characteristics, would be required for identifying schools that perform differently in contexts of challenge. While a single index measure of school academic performance might contain significant noise, with volatility from year to year, there is tremendous value in creating a database that can direct attention to the schools in need of help. Such a measure will lead

to more meaningful inferences based on the existing standards-referenced data.

Studying the performance of schools catering for the poor and disadvantaged is an important new area of study. Helping these schools improve requires a vision of school improvement that is context dependent—one that acknowledges reality and the need to compensate for the circumstances faced. Initiating research into marginalized and underperforming schools will provide greater insight into the black box of school productivity and inform school improvement practice in Trinidad and Tobago. Such insight will allow a better understanding of the nature of inequity and will provide a contextualized perspective on school effectiveness—one that gives appropriate attention to the context of the institution. International studies in the UK, Canada, and the US provide a useful framework for exploring both high- and low-achieving schools facing challenge. An important component of the framework in the context of Trinidad and Tobago must be teacher beliefs and expectations. Improving these schools is a critical activity as Trinidad and Tobago moves forward with its Vision 2020. Only by improving these schools can we ensure social mobility, education for all, and the development of human capital, so necessary for future national development.

References

Alig-Mielcarek, J. M. (2003). *A model of school success: Instructional leadership, academic press and student achievement.* Unpublished doctoral dissertation, Ohio State University.

Anderson, J. A. (2005). *Accountability in education* (Education Policy Studies). Paris: The International Institute for Educational Planning; and Brussels, Belgium: International Academy of Education.

Benveniste, L. (2002). The political structuration of assessment: Negotiating state power and legitimacy. *Comparative Education Review, 46*(1), 89–118.

Black, P., & Wiliam, D. (2007). Large-scale assessment systems: Design principles drawn from international comparisons. *Measurement: Interdisciplinary Research and Perspectives*, *5*(1), 1–53.

Chapman, C., Allen, T., & Harris, A. (2004). *The impact of networked learning communities on schools facing challenging circumstance.* Unpublished manuscript, National College of School Leadership, Nottingham.

Chester, M. D. (2005). Making valid and consistent inferences about school effectiveness from multiple measures. *Educational Measurement: Issues and Practice, 24*(4), 40–52.

Choi, K., Goldschmidt, P., & Yamashiro, K. (2005). Exploring models of school performance: From theory to practice. In J. L. Herman & E. H. Haertel (Eds.), *Uses and misuses of data for educational accountability and improvement* (Yearbook of the National Society for the Study of Education, Vol. 104, Part 2, pp. 119–146). Boston, MA: Blackwell.

Coladarci, T. (2006). School size, student achievement, and the "power rating" of poverty: Substantive finding or statistical artifact? *Education Policy Analysis Archives, 14*(28). Retrieved from http://epaa.asu.edu/epaa/v14n28/.

Ferrer, G. (2006). *Educational assessment systems in Latin America: Current practice and future challenges.* Washington, DC: Partnership for Educational Revitalization in the Americas.

Goddard, R. D., Hoy, W. K., & Woolfolk, H. A. (2000). Collective efficacy: Its meaning, measure and impact on student achievement. *American Educational Research Journal, 37*, 479–508.

Greaney, V., & Kellaghan, T. (1996). *Monitoring the learning outcomes of education systems.* Washington, DC: World Bank.

Greaney, V. & Kellaghan, T. (2007). *Assessing national achievement levels in education.* Washington, DC: World Bank.

Haertel, E. H. & Lorie, W. A. (2004). Validating standards-based test score interpretations. *Measurement: Interdisciplinary Research and Perspectives, 2*(2), 61–103.

Harris, A., Clarke, P., James, S., Gunraj, J., & James, B. (2006*). Improving schools in exceptionally challenging circumstances*. London: Continuum.

Hoy, W. K., Sweetland, S. R., & Smith, P. A. (2002). Toward an organizational model of achievement in high schools: The significance of collective efficacy. *Educational Administration Quarterly, 38*, 77–93.

Kane, M. T. (2001). So much remains the same: Conception and status of validation in setting standards. In G. J. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives* (pp. 53–88). Mahwah, NJ: Lawrence Erlbaum.

Kairi Consultants. (2007). *2005 Analysis of the Trinidad and Tobago Survey of Living Conditions.* Port of Spain, Trinidad: Ministry of Social Development.

Kelley, C., & Finnigan, K. (2003). The effects of organizational context on teacher expectancy. *Educational Administration Quarterly, 39*(5), 603–634.

Lochan, S. (1998). *Report on Bethlehem Boy's RC Primary and Bethlehem Girls RC Primary School.* Unpublished manuscript, School of Education, UWI, St. Augustine.

MacBeath, J. (2005). *Responding to challenging circumstances: Evaluation of the 'Schools Facing Exceptionally Challenging Circumstances' project.* Cambridge, UK: Faculty of Education, University of Cambridge.

MacBeath, J., Gray, J. M., Cullen, J., Frost, D., Steward, S., & Swaffield, S. (2007). *Schools on the edge: Responding to challenging circumstances.* London: Paul Chapman.

McDonnell, L. M. (2005). Assessment and accountability from the policymakers' perspective. In J. L. Herman & E. H. Haertel (Eds.), *Uses and misuses of data in accountability testing* (Yearbook of the National Society for the Study of Education, Vol. 104, Part 1, (pp. 35–54). Boston, MA: Blackwell.

McDougall, D. E., Gaskell, J., Flessa, J., Kugler, J., Jang, E. E., et al. (2006*). Improving student achievement in schools facing challenging circumstances*. Final report for the Literacy and Numeracy Secretariat, Ministry of Education, Ontario. Toronto, ON: Centre for Urban Schooling.

Mizala, A., Romaguera, P., & Urquiola, M. (2007). Socioeconomic status or noise? Tradeoffs in the generation of school quality information*. Journal of Development Economics, 84,* 61–75.

Muijs, D., Harris, A., Chapman, C., Stoll, L. & Russ, J. (2004). Improving schools in socio-economically disadvantaged areas: An overview of research. *School Effectiveness and School Improvement, 15*(2), 149–176.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *PIRLS 2006 International Report: IEA's Progress in International Reading Literacy Study in Primary Schools in 40 Countries.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Olivares, J. (1996). Inclusive national testing: Chile's 'quality of education assessment system.' In A. Little & A. Wolf (Eds), *Assessment in transition: Learning, monitoring and selection in international perspective.* (pp. 118–133). Oxford: Pergamon.

Parker, K., Hannah, E., & Topping, K. J. (2006). Collective teacher efficacy, pupil attainment and socio-economic status in primary school. *Improving Schools, 9*(2): 111–129.

Perry, G. E., Arias, O. S., Lopez, J. H., Maloney, W. F., & Serven, L. (2006). *Poverty reduction and growth: Virtuous and vicious circles.* Washington, DC: World Bank.

Shapiro, J., & Trevino-Moreno, J. (2004). *Compensatory education for disadvantaged Mexican students: An impact evaluation using propensity score matching* (World Bank Policy Research Working Paper No. 3334). Washington DC: World Bank.

Somech, A., & Ron, I. (2007). Promoting organizational citizenship behavior in schools: The impact of individual and organizational characteristics. *Educational Administration Quarterly, 43*(1) , 38–66

Trimble, S. (2002). Common elements of high performing, high poverty middle schools. *Middle School Journal, 33*(4), 7–16. Retrieved from www.nmsa.org/services/msj/msj_march2002.htm#a

van de Grift, W. J. C. M., & Houtveen, A. A. M. (2006). Underperformance in primary schools. *School Effectiveness and School Improvement, 17*(3), 255–273.

Vegas, E., & Petrow, J. (2008). *Raising student learning in Latin America: The challenge for the 21st century.* Washington, DC: World Bank.

UNESCO (2002). Q*ualitative study of schools with outstanding results in seven Latin American countries*. Santiago, Chile: OREALC/UNESCO.

Winkler, D. (2000). Educating the poor in Latin America and the Caribbean: Examples of compensatory education. In F. Reimers (Ed.)*, Unequal schools, unequal chances: The challenges to equal opportunity in the Americas* (pp. 112–135). Cambridge, MA: David Rockefeller Centre for Latin American Studies, Harvard University.

Wolff, L. (2004). Educational assessments in Latin America: The state of the art. *Applied Psychology: An International Review, 53*(2), 192–214.

World Bank. (1993). *Caribbean region: Access, quality, and efficiency in education*. Washington, DC: Author.

World Bank (1995). *Trinidad and Tobago: Poverty and unemployment in an oil based economy. (*Report No. 14382-TR*)*. Washington, DC: Author.

Wrigely, T. (2004). School improvement – a broader view. *Improving Schools 7*(1), 5–6.

Wrigely, T. (2006). Schools and poverty: Questioning the effectiveness and improvement paradigms. *Improving Schools, 9*(3), 273–290.

Validating the Performance Standards in the 2005 and 2006 National Primary School Achievement Tests in Mathematics and Language Arts

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Abstract. Performance standards are informed expectations of student achievement levels in a population. These expectations are based on knowledge or skills in the curriculum (content standards) or on the content and demands of test items. Arguably, performance standards for national assessments of educational achievement are required to evaluate quality and equity within an education system. In 2005, performance standards were introduced into the reporting system for the Trinidad and Tobago primary school national assessments. The critical question was the meaningfulness and usefulness of these performance standards; an issue that relates to validity. Validation considers the legitimacy and defensibility of procedures. Evidence for the validity of standards may come from three different sources: procedural, internal, and external. This paper analysed these three sources of validity evidence for the performance standards established in the 2005 and 2006 national assessments. Following recent trends, the study makes significant use of qualitative data obtained from the judges in evaluating the cognitive processes and perceptions associated with judging and setting standards *in situ*. This type of data was obtained from journals and responses to open-ended questions in a questionnaire administered to participants during the standard-setting process. The 2005 data suggest that while some evidence was strongly supportive of procedural validity, problems in logistics and management of the process proved noteworthy limitations. Targets of improvement for future standard-setting exercises should focus on addressing these deficiencies. Additionally, future evaluations of the process should include additional quantitative information necessary to judge the internal and external validity.

Reporting With Standards-Referenced Data

National assessments of educational achievement are designed to describe student achievement levels in parts of, or the entire, education system (Greaney & Kellaghan, 2007). Fiske (2000) described these tests as "regular and systematic measurement exercises designed to determine what students have learned as a result of their educational experiences" (p. 14). Thus, these assessments are an essential component in a national evaluation system (Ferrer, 2006). Promoted in 1990 as a tool for achieving education for all, by the turn of the century, only St. Lucia and Jamaica in the Anglophone Caribbean had viable and effective national assessment systems (World Bank, 1993). By then, Trinidad and Tobago had developed a rudimentary system, but this provided little usable data. In 2004, the assessment scheme was therefore restructured with mandatory census administration and centralized test development, scoring, and reporting introduced. Initially, results from the annual full cohort national assessment system were reported using norm-referenced indices, such as the norm curve equivalents (NCEs). This allowed easy comparison between school and regions, but provided little information about student performance as measured against curriculum benchmarks.

As a result, in 2005, following the United States (US) National Assessment of Educational Progress (NAEP), a standards-referenced measurement system was introduced. An important consideration in this decision was the inability of norm-referenced data to answer the question of *"How good is good enough in terms of the level of student achievement?"* While comparisons between institutions and regions were important, the extent to which students are performing acceptably must be answered if evaluators are to make sound judgements (Brandon, 2005). From this perspective, norm-referenced inferences from high-stakes public examinations are of little value. In a national evaluation system, such data are limited unless it can be proven that the test (a) has acceptable content validity, (b) is aligned to the curriculum, and (c) is appropriately difficult for the particular student population. Unlike public examinations, national assessments of educational achievement

are aligned to core curriculum objectives, and standards-referenced measurement makes differences in test difficulty a non-issue by anchoring judgements in substantive statements about levels of performance.

The Process of Developing Defensible Performance Standards

The fundamental element in any standard-referenced measurement system is the performance standard (Hansche, 1998). Kane (2001) defined such a performance standard "as a level of performance described in terms of what examinees at a particular level know and can do" (p. 55). Therefore, performance standards are defined as informed expectations of student proficiency, usually based on the objectives of the curriculum (content standards) and items in the test instruments. Each standard includes both a normative and a substantive element, and allows a qualitative description of different levels of student performance (Kane, 1994). These different levels of performance might be considered the "normative" aspect of the standard, while the substantive aspect is the written descriptive statements of the expected performance (Haertel & Lorie, 2004).

Therefore, unlike norm-referenced indices, a performance standard can yield criterion-referenced information that allows a judgement of "acceptable" performance (Brandon, 2005). These standards can function as markers, allowing student performances to be referenced against curriculum benchmarks (Cizek & Bunch, 2007). Standard setting is the process by which cutscores for each proficiency level are determined. These cutscores are at the heart of the process, with a single cutscore at the lower boundary of each proficiency level. By definition, individuals who have attained marks at or above the cutscore have met the specified standards. Therefore, a system of performance standards includes (a) definitions of each level of proficiency, (b) standard setting procedures for obtaining the cutscores for each level, and (c) associated cutscores (Brandon, 2005).

Standard-setting procedures are rational, well-documented scientific approaches to developing reasonable standards for educational performances based on human judgements (Cizek, 1993). The validity or defensibility of the standard is closely tied to the documented procedure. While defensibility is a legal and technical benchmark, there is no gold standard. This means that while different procedures and different judges might give vastly different results, procedural and technical rigour is the goal (Cizek, 1995). Thus, Cizek (1993) defined a defensible standard as "the proper following of a prescribed, rational system of rules or procedures resulting in the assignment of a number to differentiate between two or more conceivable states or degrees of performance" (p. 100). Current best practice includes the use of multiple well-qualified judges guided by well-written descriptors.

Guided by Standards in Developing the Standards

The standards for educational and psychological testing (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999) provided clear guidelines on the development, use, and validation of performance standards. On the matter of setting standards, the document emphasized:

> A critical step in the development and use of some tests is to establish one or more cut points dividing the score range to partition the distribution of the scores into categories. . . . Cutscores embody the rules according to which tests are used or interpreted. Thus, in some situations, the validity of test interpretations may hinge on the cut scores. (p. 53)

The specific guidelines that apply to the standards-setting process are standards 1.7, 2.14, 4.19, 4.20, 4.21, and 14.17. Standard 14.17 applies especially to licensure tests, but the rest are applicable to the setting of standards in educational tests. These standards specify the need for expert judges with training and clear protocols for making decisions (1.7 and 4.19), and documentation, reporting, and indices that allow efficient judgements (2.14, 2.15, 4.19, 4.20, and 4.21).

Table 1. Labels and Descriptions for Performance Levels in the 2005 and 2006 National Achievement Tests of Trinidad and Tobago

DERE Performance Labels	Alternative Performance Labels	Description of Performance Level
Level 4	Advanced, Exemplary, Accelerated, Exceeds Standards	**(Exceeds the Overall Standard of Work required at this level):** Superior academic performance indicating an in-depth understanding and exemplary display of the skills required.
Level 3	Proficient, Competent, Mastery, Satisfactory, Meets/Reaches Standards	**(Meets the Overall Standard of Work required at this level):** Satisfactory academic performance indicating a solid understanding and adequate display of the skills required.
Level 2	Partially Proficient, Nearing Proficiency/Standards, Borderline, Basic, Just/Below Standards	**(Nearly Meets the Standard of Work required at this level):** Marginal academic performance, work approaching, but not yet reaching, satisfactory performance. Performance indicates a partial understanding and limited display of the skills required.
Level 1	Below Basic, Critically/Well Below Standards, Beginner, Novice, Emergent	**(Well Below the Standard of Work required at this level):** Inadequate academic performance that indicates little understanding and minimal display of the skills required. There is a major need for additional instructional opportunities, remedial assistance, and/or increased student academic commitment to achieve to the Proficient Level.

In 2005, the system included four performance levels, with accompanying descriptions for each level. As shown in Table 1, there were two passing levels (Levels 4 and 3) and two levels describing unsuccessful performance (Levels 1 and 2). Although it was initially agreed that no labels would be attached to the levels, the following labels were employed during the 2007 standard setting: (Level 4) *Exceeds Standards*; (Level 3) *Meets Standards*; (Level 2) *Below Standards*; and (Level 1) *Critically Below Standards*. To obtain valid and defensible cutscores, a standard-setting plan was developed. This plan included protocols and procedures that were designed to yield credible cutscores. The focus of the plan was on ensuring defensibility and transparency, attributes considered critical to eventual acceptance of the standards by policy makers, teachers, and key stakeholders.

Each standard-setting method differs in terms of cognitive complexity, reproducibility, precision, and appropriateness (Reckase, 2000). While some methods, like the Angoff, might have high precision and reproducibility, the higher cognitive complexity could result in difficulty for novice panellists. For example, the concept of minimal competence used in the Angoff procedures might be difficult or impossible for some judges to conceptualize, especially across multiple levels (Hambleton et al., 2000; Zieky, 1997). To limit the reliance on one method, three separate procedures were therefore employed, leading to a final synthesis decision. The methods chosen included two variants of the Angoff—whole booklet classification and the contrasting group method. In standard-setting practice, this multiple-method synthesis procedure has been employed by the Kentucky Department of Education in the US, and is further documented in the academic literature by Green, Trimble, Scott, and Lewis (2003). The Division of Educational Research and Evaluation's (DERE) synthesis strategy is summarized in Table 2. As shown in this triangulated design, each method differed in the judgement locus, reference, and procedure.

In 2005, only the extended Angoff variant was used, with panellists working for two rounds and normative data presented at the end of Round 1. In 2006, the protocol was changed so that the probability Angoff variant was used for the dichotomously scored items. This change was to reduce the distortion and loss of information likely to occur when applying the extended Angoff to these items. The 2006 procedure also included three iterative rounds of judgements, with normative data, discussion, and review of

individual decisions by panellists. The whole booklet classification and contrasting group methods appealed to classroom teachers because judgements were based on the actual scripts or performances of students in the classrooms. The whole booklet classification also had face validity and is broadly similar to the boundary-setting methods employed by public examining bodies. Some have even suggested that the whole booklet classification is more appropriate for tests composed exclusively of constructed response item (Cizek, 2001).

Table 2. Standard-Setting Strategy for the Standards-Referenced Primary School National Achievement Tests

Judgement/Aspect of Process	Test-Centred Methods		Examinee-Centred Method	Combination
	Probability & Extended Angoff	Holistic Method	Contrasting Group	SYNTHESIS
Nature of decision-making process (Locus & Procedure)	Binary/Probability Judgements & Estimated Proficiency on item	Binary Judgement & Proficiency on set of items	Binary Judgement & Proficiency in all school settings	Impact data and comparison of cutscores
Iterative process	Yes	No	No	No
Reviewed student records of performance in the class	No	No	Yes	No
Examined examination scripts	Round 2	No	No	No
Examined normative data, including relative difficulty of items	Yes	Not required	No	No
Knowledge of minimum pass levels for each item or cutscores set by other teachers	Yes	No	No	Yes
Made use of relative impact data[o]	No	No	No	Yes

[o] Provided in synthesis only

The variant of the whole booklet classification method followed that described by Jaeger and Mills (2001). In this specific protocol, panellists were provided with folders containing scripts spanning the entire range of score performance. The panellists were required to read through entire scripts and then make a judgement in one of 12 categories. This procedure demanded a compensatory judgement because judges were required to balance differences across items and tasks. While this approach was possible for the shorter Standard 1 examination, it presented difficulty for the longer examinations or examinations with great variation in the tasks, such as Language Arts. In 2005, judges sampled 25% of the scripts in each subject area and Standard, but in 2006, this percentage was increased to 40% in an attempt to increase precision.

While stakeholders were involved in the first two methods, only teachers could participate in the contrasting group method. The method was also modified so that judges classified students on a 12-point scheme similar to that used in whole booklet

classification. In 2005, the synthesis procedure involved teachers, stakeholders, and Ministry of Education officials. Data on the distribution of students in the different levels, by gender, and geographic locality were presented, along with the original tasks and descriptors as sources of information when making the final decision in the synthesis step. Panellists made decisions following the documented procedure of Green, Trimble, Scott, and Lewis (2003). The procedure was restructured in 2006 so that the synthesis meeting included only original panellists working in main groups.

Implementing a programme involving training integrated with multiple methods required a great deal of resources and efficient management. To illustrate, high precision on the Angoff procedure required a large number of panellists and multiple iterative rounds. Likewise, the precision of the booklet classification demanded large numbers of scripts spanning the range of the score distribution and organized into folders. Some requirements were not easily met by the sponsoring agency. For example, there were problems with the supply of qualified judges. Initially, teacher panellists were required to have at least five years experience in the target classrooms, with at least a bachelor's

degree, preferably in the subject areas, and appropriate professional qualifications. Although the target was 120 judges, this number of suitably qualified candidates could not be found. To compensate for these deficiencies, prior to the standard-setting exercise, a core group of curriculum facilitators was trained to function in the role of group leaders. The facilitators helped with the flow and sequencing of activities.

The entire first day and part of the second day were devoted to panellists completing the tests and constructing descriptors. The Angoff procedure was explained on the second day, with practice in the evening. The first round of the Angoff procedure was conducted on the third day, followed by the whole booklet classification method. This sequencing ensured that judges were able to use actual work samples before the second round of the Angoff. The second round of the Angoff procedure was completed by the end of the third day. On the fourth day, panellists focused on both the whole booklet and the contrasting group methods, with the fifth day reserved for clean-up and completion of all tasks and the evaluation. A separate day and panel was arranged for the synthesis meeting.

Table 3. Evaluation Framework Used for Validating Standards

Evaluation Aspect	Definition or Meaning
PROCEDURAL	The defensibility and rigour of procedures
1) Explicitness	All steps are made explicit and protocol is detailed and documented
2) Practicability	The chosen methods can be implemented without much difficulty
3) Implementation	The degree to which key elements of the process are implemented in a thorough and systematic manner
4) Feedback	The extent to which panellists felt that the procedures were appropriate
5) Documentation	The extent of technical documentation for communication and evaluation purposes
INTERNAL	Consistency of results across methods, panellists, and rounds
6) Consistency within method	The precision of each cutscore as measured by the standard error
7) Intra-panellist consistency	The consistency of panellists' judgements across rounds
8) Inter-panellist consistency	Inter-rater reliability
9) Other measures	Consistency across item types and content strands
EXTERNAL	Comparison of results to external sources of information
10) Comparisons to other standard-setting methods	Different standard-setting methods applied to the same tests
11) Comparisons to other sources of information	Results compared with external sources of information
12) Reasonableness of cutscores	Reasonableness of the distribution of the achievement results based on the standards

Table 4. Characteristics of Panellists in the 2005 Standard-Setting and Synthesis Procedures

Panellists' Characteristics	Standard Setting	One-Day Synthesis
Male/female ratio	0.10	0.13
% with Cert.Ed.	47.69	NA
% with B.Ed	56.25	NA
% M.Ed. & above	13.85	NA
% Districts represented		
✓ Caroni	14.75	13.89
✓ North East	4.92	13.89
✓ POS	9.84	2.78
✓ South East	18.03	11.11
✓ St. George East	6.56	11.11
✓ St. Patrick	11.48	8.33
✓ Victoria	21.31	25.00
✓ Tobago	13.11	13.89
% in each role position		
✓ Stakeholder	3.08	5.77
✓ Teacher	76.92	23.08
✓ Curriculum Officer	none	7.69
✓ Curriculum Facilitator	16.92	40.38
✓ Teacher Educator	none	3.85
✓ Site Administrator	3.08	9.62
✓ Head Office Administrator	none	9.62

A Framework for Evaluating Performance Standards

Evaluating the standard-setting process involves gathering evidence for the validity of the standards. Assuming that there is sufficient credible evidence for validity of the tests, evidence is also needed to support the conceptual basis of the standards as well as its operationalization into cutscores. A number of frameworks are available for validating performance standards. This paper made use of the comprehensive framework developed by Kane (1994). This is based on three distinct elements: procedural, internal, and external (Hambleton & Pitoniak, 2006). The framework components are illustrated in Table 3. The procedural area considers reasonableness, rationality, and rigour of the standards. This area is considered a primary source of evidence, especially when policy decisions are being evaluated. Procedural evidence includes the dimensions of explicitness, practicality,

implementation, panellist feedback, and documentation.

Explicitness indicates that all the steps are based on explicit definitions and procedures, and implies that the process was set in a thorough fashion. Practicability, or "understandability," incorporates Standard 4.21 and is focused on real-world logistics and technical defensibility. Implementation of procedures focuses upon a number of procedures, including selection and training of panellists, definition of the performance standards, and iterative systematic data collection. Panellists' feedback might include confidence in the standards and procedures associated with developing the standards. Documentation is a key source of evidence in situations where defensibility is an issue, and should include all other types of validity evidence. The internal criterion includes within-method, intra-panellist, and inter-panellist consistency; and the external area relates to comparisons between

methods and across different sources of information.

Most evaluation frameworks pay special attention to procedural validity because it is linked to legal and technical defensibility. Indeed, this type of validity is the first defence to any challenge about the arbitrariness of a standard. In traditional evaluations, much of the information is obtained from panellists' feedback. Hambleton's (2001) standard-setting evaluation questionnaire is the standard instrument in these exercises. The questionnaire measures the adequacy of training, activities, confidence in the process, and outcomes. This evaluation questionnaire included a mixture of closed and open-ended items, ensuring both recall and recognition (Skorupski & Hambleton, 2005). However, this type of data provides only weak support for appropriateness of the standards and little insight into the cognitive processes of panellists (McGinty, 2005). It seems prudent, therefore, to collect qualitative data on panellists' perspectives (Skorupski & Hambleton). Data collected concurrently with judging will provide greater insight into the cognitive decision-making processes of judges (Giraud, Impara, & Plake, 2005). Brandon (2004) has noted that the Angoff remains a virtual black box when it comes to understanding how panellists make judgements. This argument is doubly true for other standard-setting methods, and has special significance in Trinidad and Tobago with the lack of standard-setting experience among judges.

Methods

Data were collected from both the 2005 and 2006 standard-setting exercise. The study made use of a variety of data types, including quantitative and qualitative sources. Quantitative information was obtained from different rounds of the standard-setting process. This includes cutscores and panellists' ratings. Quantitative feedback data were obtained from the standardized evaluation form patterned after Hambleton (2001). This questionnaire also provided some qualitative data in the open-ended responses. Additional qualitative data were collected from diaries and journals kept by respondents, and from the documents used and distributed to various participants in the process. The data were

integrated in addressing each of the evaluation elements proposed by Kane (1994).

This overall approach to data collection provided both concurrent recall and retrospective recognition data. The diary/journal allowed in-depth reflection and an exploration of evolving insights (Hiemstra, 2001). Panellists were required to keep a daily account of their experiences and to recount their personal understandings, thoughts, and feelings. In 2005, 49 questionnaires and 38 diaries/journals were collected. In 2006, 65 questionnaires and 51 diaries/journals were returned. Since the standard-setting procedure was an intensive one-week process, the return rate of 92% for the questionnaires and 69% for the journals and dairies can be considered adequate.

All qualitative data were transcribed, coded, organized, and reviewed by two independent researchers. Content analysis was used for text data obtained from the questionnaires and the journals. Codes were constructed after an initial reading of the text. These preliminary codes were then grouped into themes and tables, with themes, codes, and sample statements constructed. The entire coding scheme was then reapplied to the text data and tables refined. Sample statements codes and themes were verified by an independent reviewer. The narrative was written by decoding the tables. The questionnaire had a slightly different design across the two administrations. In 2006 only, items from Part 1 of the questionnaire were based entirely on the evaluation framework of Hambleton (2001). The instrument included closed and open-ended questions targeting both recall and recognition of key standard-setting activities, such as the construction of descriptors, the efficacy of training, and the overall confidence in the outcomes. Part 2 of the 2005 and 2006 questionnaire consisted of eight open-ended questions originally designed for a focus group.

Findings

Procedural

Explicitness. The standard-setting process was fully documented prior to the full implementation phase. Apart from the initial DERE proposal to the sponsor agency, a standard-setting manual was given to all panellists at the start of the process. Although the process was fully documented, it

might be that this level of detail could have created a negative impact. Notably, one 2005 panellist expressed her concerns in her diary:

We were given a blue booklet in which contained information, which, as true teachers we tried to decipher. This was a mistake! It led to mass confusion.

This challenge of introducing such detailed documentation to novice panellists was partly resolved by the use of interactive lectures, group discussion, and practice. These approaches helped respondents cope with the newness and cognitive complexity of the process. However, although many adapted quickly to the process, some were still uncomfortable with the schedule of activities, as a 2006 panellist noted in her diary:

This was a new experience for me because I never was involved in any such activity before. The day progressed nicely with the introduction and the presentation . . . [The speaker] was a pleasure to listen too. His style was very clear and interesting. During the day, the discussions in small groups proved very beneficial. The introduction of the Angoff was a bit out of timing because it was a new concept to most and was introduced at 3:30 p.m. when we were all very tired. All in all the day was good.

It appeared that responses to the detailed documentation were quite varied and depended upon the judges' past experience, attitude, and work habits. For example, some panellists were actually impressed by the detail, as noted in the diary of a 2006 participant:

Never before did I know that there would be such intricate and detailed analysis into the marks obtained by children. It is a tremendous exercise and I personally feel that indeed we are now leading somewhere in preparing work for the various levels of children in schools.

Another 2006 panellist expressed her willingness to engage in the process although she felt that she was unfamiliar with the majority of core concepts. Her journal entry indicated that she was motivated by her intellectual curiosity:

Many concepts introduced were quite new. It seemed like quite a task to complete. I am quite interested in understanding the standard setting as the Angoff, Whole Booklet and the Contrasting group. This exercise interested me because after correcting the National Test scripts, I was eager to learn how it was going to be standardized.

Still another panellist considered the work somewhat monotonous, yet she was moved to complete the activity by focusing upon the outcomes of the task:

Today, the Angoff method continued. It was a learning experience. Firstly we completed the writing of descriptors, and satisfied that we had reached precision level we made our final presentations. Later we started the practical work, which became a bit monotonous but the desire to get more out of the exercise spurred me on.

Group discussion played a critical role in helping panellists adapt and understand the process of standard setting. Group discussion ensured that different ideas about student performance were disseminated and unrealistic or biased expectations were moderated. Thus, without prompting, panellists were keen to note the value of group discussion because of its ability to generate deeper insight into the process of judging. Significantly, too, in the 2006 standard-setting exercise, a number of panellists also indicated that the group process enhanced their sense of belonging and community. This made the overall task easier by ensuring quicker social adjustment to the unfamiliar surroundings.

Asked specifically about the role and value of group discussions, panellists suggested five main advantages. They indicated that group discussion provided:

1. useful information for altering initial expectations and judgement ratings;

2. deeper, thought-provoking insight into student performance for panellists who were new teachers;

3. credible arguments for cementing and making judgements;

4. added insight into students' thinking when responding to written questions;

5. alternative perspectives on issues and responses.

The value of group discussions during the decision-making process was clearly noted by two panellists:

The discussions were extremely healthy. Some people had strong views, but provided credible arguments to substantiate those views. In some instances, it caused me to change my ratings wile in others it didn't since I am also one who would argue strongly for anything that I truly believe in. [Panellist 1]

Group discussions, helped me to expand my way of thinking about students at a Standard 1 level, since my beliefs were based entirely upon interaction with students in my class. The group discussions shed light on very dark matters, so, yes I did benefit from these discussions. The number of years experience in the teaching profession placed me at a slight disadvantage from the other seasoned teachers in my group. I was therefore, very open and willing to accept any thoughts or ideas that they were willing to share. [Panellist 2]

Practicability

Credibility and ease of implementation were significant issues because most panellists were unfamiliar with standards-setting procedures. This was one of the main reasons behind the choice of standards-setting strategy. The most significant factors impeding implementation appeared to be cognitive challenge and organization of the process. It was expected that the standard-setting process would prove cognitively challenging for most of the panellists. This was because while many judges possessed at least a first degree in a content area or in education, few had prior knowledge or experience with standard setting. Therefore, both the content and methodology were often new and unfamiliar to participants. This added greatly to the challenge, as one experienced test scorer noted in an entry on the first day of her journal entry:

Today was quite interesting and confusing. Many concepts introduced were quite new. It seemed like quite a task to complete. I am quite interested in

understanding the standard setting as the Angoff, [Whole Booklet Classification] and the Contrasting Group. This exercise interested me because after correcting the National Test scripts, I was eager to learn how it was going to be standardized. The process of determining descriptors for the various levels was a tedious one, since agreement was hard to reach at times. However, it was a very good method of knowing the descriptors. . . . At the end of the day I felt I did not have a clue about the Angoff method and I hoped that the next day would assist with this. [Panellist – Journal Entry]

The standard-setting exercise was also regarded as difficult because respondents were required to participate in multiple tasks and use information from many different sources at the same time. For example, in making judgements about student performance, panellists had to construct and use descriptors, examine data, and observe student work samples, while discussing their judgements with other panellists. Some processes also demanded skills that panellists may not have had at that time. For example, one panellist commented on the difficulty of dealing with item analysis data presented in part of the Round 2 and 3 of the Angoff:

The afternoon session, with the introduction of the statistical evidence, in terms of percentages, brought an even deeper level of reasoning for me. I now had to look at the percentages and determine the difficulty level of the item, look at the rubric and the item itself and determine my round 3 cutscores for the standard 1 Maths. This was a very draining exercise. I do not believe that thinking about anything over my holidays so far drained me that much. I just hope that I performed the exercise well. I dread to think of doing it again tomorrow for Standard 3 Maths. [Panellist – Journal Entry]

The degree of challenge was also high because judges had to learn and employ three different procedures at roughly the same time. While journal entries indicated that panellists' knowledge evolved rapidly, this sharp learning curve could also result in much frustration. The integrated design of the exercise also made it difficult to manage time, and some respondents firmly

believed they had insufficient training and practice.

Poor organization of the process was a frequently mentioned issue in the 2005 implementation. Indeed, quite a few panellists regarded the overall organization of the event as poor. They also believed that this disorganization led to frustration and confusion during the judgement process. While administrative delays and alterations were relatively infrequent, unsatisfactory arrangements made a difficult and challenging task even more arduous, thereby impacting upon the quality of judgements. For example, one panellist noted that having groups and individuals shifted about constantly added to the confusion over the process:

I did not like the way the group was shifted around constantly with no clear indication of what was to be done. This phase was a bit confusing. However, I understand that since this is the first time that this exercise is being done, adjustments were being made as we went along. [Panellist, 2005]

While the situation was much improved in 2006, with better accommodation, quality meals, and greater numbers of clerical support staff to assist, there were still occasional concerns over inefficiency. Nevertheless, in 2006, panellists were more likely to commend the Ministry of Education for the new physical setting and overall better organization. For example, one panellist expressed her feelings about the new workshop setting in 2006:

This morning I set forth for _____ auditorium in _____ for the standard setting of the National Tests 2006. As I entered I was amazed at what befell my eyes, the setting was pleasing to the eye. . . . This was the first time I was attending a workshop/session held by the Ministry of Education in such style. What a difference! Finally, teachers are being treated as the professionals they are! [Panellist, 2006]

Implementation

The standard-setting exercise integrated training with the task activities. While this design might have been cost-effective, it added to the difficulty of the process. Thus, quite a number of panellists felt that one way to improve the process would be to enhance the training methods. Another important aspect of implementation was the quality of the judges. Table 4 provides data on the characteristics of the judges. As shown, more than half of the teachers had a Bachelor's in Education and 14% had postgraduate qualifications. These statistics are impressive considering that access to university training was limited for primary school teachers prior to 1994. An effort was made to include teachers from each district and Tobago; so that no one region was dominant. The great majority of the panel were teachers, with administrative staff presented at the final synthesis meeting.

Table 5. 2006 Panellists' Perceptions of the Quality of Performance Standards Generated at Different Proficiency Levels (N= 49 to 58)

Performance Level	Totally Inadequate	Ratings			Totally Adequate
	1	2	3	4	5
Level 4 (Exceeds Standards)	2.0	2.0	12.2	42.9	40.8
Level 3 (Meets Standards)	1.8	0	17.5	56.2	28.1
Level 2 (Below Standards)	1.8	0	19.3	47.4	31.6
Level 1 (Well Below Standards)	3.4	0	8.6	44.8	43.1

Table 6. 2006 Panellists' Confidence Classification Process (N=65)

	Confidence			
	Very High	High	Medium	Low
Level 4 Classification	36.9	53.8	9.2	0
Level 3 Classification	16.9	61.5	21.5	0
Level 2 Classification	20.0	55.4	24.6	0
Level 1 Classification	43.1	47.7	9.2	0
Overall Procedure	12.3	69.2	15.4	0

Table 7. Cutscores for Angoff Round 1 (2005)

Std 1 Math	Performance Level	Cutscore	SEM	SD	Total Number
	3	31.894	0.132	0.591	31
	2	24.360	0.084	0.377	31
	1	11.551	0.083	0.372	31
Std 1 Lang					
	3	40.173	0.154	0.842	31
	2	28.459	0.122	0.667	31
	1	15.050	0.084	0.460	31
Std 3 Math					
	3	47.864	0.113	0.566	20
	2	36.043	0.061	0.303	20
	1	17.391	0.044	0.218	20
Std 3 Lang					
	3	49.988	0.154	0.911	20
	2	36.913	0.099	0.583	20
	1	18.826	0.070	0.413	20

Feedback

Tables 5 and 6 summarizes participants' confidence in the process and outcomes. As shown in Table 4, the majority of panellists gave a rating of 4 and 5 on the adequacy scale to the standards generated for each proficiency level. They therefore felt confidence about the products generated and the integrity of the process. It appeared that panellists considered the quality of the standards generated at some proficiency levels to be of higher quality. Thus, in rating, less than 30% gave a rating of 5 for "meets standards" and "just below the standard." Table 5 shows a similar pattern for panellists' confidence in the classification process.

Documentation

Documentation of the process was done for the sponsoring agency, the panellists, the public, and the evaluators. The sponsoring agency was provided with three sets of information:

1. the plan for standard setting, identifying the strategies and procedures required for implementation;

2. a summary of scores, allowing quick and efficient calculation of cutscores;

3. qualitative and quantitative data in a consultant's report, derived from monitoring and evaluation activity during the process.

Panellists were provided with:

1. forms and instructions for all strategies;

2. data from the process, including item analysis and performance patterns and cutscores for the synthesis meeting;

3. a detailed manual providing information on all the procedures.

Stakeholders were provided with the cutscores and an explanation, rationale, and judgement of the process based on the consultant's report.

Internal-Method, Intra-Panellists, Inter-Panellists, and Decision Consistency

Tables 7 to 10 provide data from the 2005 standard-setting exercise on cutscores, standard errors, and standard deviations for each performance standard and each method. This data allowed a judgement on three sources of internal validity: (a) consistency across methods, (b) panellists' consistency across rounds in the Angoff, and (c) intra-panellists' agreement across rounds. Some comparisons would apply to the Angoff method only since this was the only method in which two rounds were used. As shown in Tables 7 and 8, the standard errors for all the performance standards for Angoff Rounds 1 and 2 are relatively low compared with the whole booklet (Table 8) and contrasting group methods. The data indicated that to achieve a similar level of consistency within method, the numbers of scripts marked in the whole booklet and the number of students assessed in the contrasting group should be substantially increased. While the standard variance for the performance levels was low in Round 1 of the Angoff, it increased in Round 2 rather than decreased, suggesting that judges' views were converging, as expected.

Table 8. Cutscores for Angoff Round 2 (2005)

Std 1 Math	Performance Level	Cutscore	SEM	SD	Total Number
	3	33.377	0.156	0.695	31
	2	24.052	0.087	0.387	31
	1	10.405	0.093	0.416	31
Std 1 Lang					
	3	37.714	0.139	0.763	31
	2	23.711	0.107	0.586	31
	1	8.912	0.069	0.375	31
Std 3 Math					
	3	39.636	0.109	0.547	20
	2	29.304	0.061	0.306	20
	1	13.739	0.052	0.259	20
Std 3 Lang					
	3	39.652	0.139	0.823	20
	2	29.913	0.096	0.569	20
	1	14.783	0.073	0.434	20

External-Comparison With Other Methods, Sources of Data, and Reasonableness of Cutscores

Qualitative and quantitative evidence was collected to make a judgement on the external validity of the process. The data include a comparison between methods and the reasonableness of the cutscores, as measured by the impact. In terms of comparison between the methods, panellists were asked directly which standard-setting method was the most difficult. In the 2006 questionnaire, 39 of 53 panellists identified the Angoff. The Angoff was often considered especially difficult because it was abstract, required interpretation of statistical data,

lacked authenticity, and employed the concept of a borderline or minimally competent student, which was difficult for some to conceptualize. In contrast, only seven panellists regarded the whole booklet classification method as the most difficult.

These panellists gave a variety of reasons for this rating. They most often cited tediousness; lack of fairness; and difficulty in making a compensatory, holistic judgement.

Table 9. Cutscores for Whole Booklet Method (2005)

Std 1 Math	Performance Level	Cutscore	SEM	SD	Total Number	Total Number of Scripts Examined
	3	27.492	0.533	4.057	120	1097
	2	21.704	0.487	4.082	152	
	1	15.231	0.599	4.835	130	
Std 1 Lang						
	3	32.992	0.500	3.894	124	702
	2	26.067	0.514	5.389	223	
	1	17.203	0.529	5.189	192	
Std 3 Math						
	3	41.806	0.947	5.269	67	715
	2	30.218	0.765	7.012	170	
	1	20.120	0.859	6.983	133	
Std 3 Lang						
	3	42.298	0.585	3.710	84	940
	2	30.512	0.647	5.931	168	
	1	21.226	0.991	8.199	137	

Table 10. Cutscores for Contrasting Group Method (2005)

Std 1 Math	Performance Level	Cutscore	SEM	SD	Total No. @ Boundary	Total Number of Students Examined
	3	27.746	0.872	4.427	59	367
	2	24.818	0.869	6.100	99	
	1	18.421	1.355	5.912	38	
Std 1 Lang						
	3	29.873	1.225	5.988	55	366
	2	24.189	1.038	6.976	90	
	1	20.875	2.080	7.366	32	
Std 3 Math						
	3	39.000	2.093	9.034	45	330
	2	28.767	1.594	9.607	73	
	1	22.478	2.350	7.823	23	
Std 3 Lang						
	3	34.243	2.807	8.617	37	328
	2	28.087	1.457	6.963	46	
	1	20.647	1.781	6.868	34	

However, when asked directly which method best captured the levels of student performance, in 2005, 18 out of 41 said the Angoff; and in 2006, 30 out of 56. This compared with 23 out of 41 for the booklet classification method in 2005 and 26 out of 56 in 2006. Thus, surprisingly, although the majority of judges regarded the Angoff as the most difficult, it was also the most highly valued procedure. Panellists who favoured the Angoff pointed to the fact that it was item-based and made

consistent use of the descriptors. Many panellists therefore considered this approach as more "objective" because their professional judgement was focused on the items rather than on students' work samples. Panellists who favoured the whole booklet classification method felt that it better accommodated the multiple factors that influenced student achievement, and was therefore more authentic because it was based on real students' responses.

An analysis of journal comments provided additional reasons for panellists valuing the Angoff so highly despite its cognitive complexity. It seemed that, in many cases, panellists regarded judgements on the whole booklet classification method as too subjective. Some panellists also said that it was very difficult to find scripts within a folder that matched the entire range of performances; although the scripts in every folder were always graded by percentile scores. In addition, having to make judgements across 12 different performance levels was often very difficult, as noted in the following comment:

The [whole booklet classification] *method for standard setting seems to me to be more difficult to assess. The range between the descriptors is hard to decipher. For example what makes the difference between a LEVEL 1-M and a LEVEL 1-H? I did the exercise of evaluating the test scripts* [Whole Booklet Method] *but I wasn't comfortable with it.* [Panellist – Questionnaire]

Another issue that contributed to the dislike of the whole booklet classification method was the difficulty in making consistent compensatory holistic judgements; a problem that occurred especially in the Language Arts paper. This was because the tasks in this paper varied greatly in the nature of the assessment tasks and length of responses. Thus, differences in performance were not easily resolved, with some students writing excellent essays but doing poorly on some shorter prompts. For example, in a journal entry, one panellist explained her difficulty in making compensatory judgements:

The [whole booklet classification] *method is too subjective. . . . in any particular booklet the student showed strength is one area and weaknesses in others and this had to be weighed* [against each other in order] *to make a good judgment. For e.g., a pupil [might solve] high order questions in problem solving, but showing no performance with basic number or measurement etc. This may lead to bias where students may make the same total score but because of where they showed their strength they are rated according to certain considerations.* [Panellist – Journal Entry]

Table 11 provides data on the number of students at the different levels. Considering impact helps us to judge the reasonableness of the cutscores. As shown, students performed better in mathematics compared with language arts. Moreover, in each discipline, the numbers of students at the highest and lowest level are low in the Angoff. Interestingly, the percentages in each level in the whole booklet method are broadly similar to that of the contrasting group, which is based on teachers' judgement of their own students using past test results. Support for the distribution on the whole booklet also comes from the 2006 PIRLS (Progress in International Reading Literacy Study), which confirms that well over 60% of the students in Trinidad and Tobago fail to reach the lowest international benchmarking in reading at the Standard 3 level (Mullis, Martin, Kennedy, & Foy, 2007).

Table 11. Reasonableness of the Cutscores: Overall Impact Using Each Standard-Setting Method

Performance Levels	*Percentage of Students in Each Level for Three Standard-Setting Methods*											
	Angoff				Contrasting Groups				Whole Booklet			
	MATH 1	LANG 1	MATH 3	LANG 3	MATH 1	LANG 1	MATH 3	LANG 3	MATH 1	LANG 1	MATH 3	LANG 3
Level 4	4.96	3.09	7.98	3.12	27.30	21.87	21.64	25.33	27.30	13.02	16.24	8.30
Level 3	34.45	34.18	23.66	19.87	12.11	15.40	21.33	15.81	23.23	17.84	22.06	27.54
Level 2	44.14	48.79	42.67	41.25	21.47	12.45	15.87	20.61	19.81	28.39	25.89	23.35
Level 1	16.45	13.94	25.69	35.76	39.12	50.28	41.16	38.25	29.66	40.74	35.82	40.81

Discussion

This study employed both qualitative and quantitative data to evaluate the validity of the performance standards documented for the 2005 and 2006 national achievement tests. Data were collected from all three standard-setting methods as well as the synthesis decision meeting. The detailed elements of Kane's (1994) scheme were adopted as the primary evaluation framework. As documented in Hambleton and Pitoniak (2006), this scheme identified three broad areas of validity: procedural, internal, and external. Greater weight was given to procedural validity because it is the centrepiece of the issue of validity; however, suitable data were also collected on internal and external validity evidence. The evaluation study makes use of both quantitative and qualitative data. The latter were collected from both questionnaires and journals. Compared with other studies of this type, qualitative data were also collected. This provides insight into the panellists' cognitive processes, an area in which there is still limited study.

Validity is not an all-or-nothing characteristic, so evidence gathered must be analysed in terms of strengths and weaknesses when coming to an overall judgement of credibility and defensibility. The findings suggested that some evidence supported the procedural validity of the standards. For example, there was substantial supportive evidence in the areas of explicitness, feedback, and documentation. The process was extensively documented, with procedures outlined for all stakeholders. Panellists indicated that they were relatively confident about the process and the standards. However, the evidence was less supportive in the areas of practicability and implementation. Much of the difficulty in these areas related to the lack of organizational capacity by the sponsoring agency, the experience of the judges, the choice of an integrated training/workshop design, and the cognitive complexity of some procedures.

Less evidence was presented in the areas of internal and external validity. Most of the data for these areas of the evaluation framework were obtained from the first 2005 standard-setting procedure. This data raised concerns about the ability of judges to use item analysis data in making judgements during Round 2 of the Angoff.

Even more worrying was the lack of precision in all methods except the Angoff. Since 2005, however, there have been further improvements in the protocols, with the number of scripts marked increased to 25% and the number of panellists involved in the contrasting group increased substantially by 2007. This is likely to remedy the low standard error and high standard deviation indices. There have also been improvements to the quality of the item analysis presentations between Rounds 1 and 2 of the Angoff, with some of the data omitted and the presentation simplified in an attempt to improve understanding by the panellists.

Overall, the findings highlighted the difficulty of implementing quality test development processes within a developing country where there is often limited institutional capacity, resources, and training. While international guidelines such as the 1999 *Standards for Educational and Psychological Testing* (AERA et al., 1999) provide useful specifications, implementing procedures using these guidelines may be difficult and costly in developing countries. The data show that to improve the comparability of the three methods, the number of panellists and papers used in the whole booklet procedure must be substantially increased. This would require additional Ministry of Education staff to process scripts prior to the standard-setting exercise, greatly increasing costs. Increasing the number of judges appears improbable considering the difficulty in obtaining the final listing of staff with the specified level of training. While many judges did possess academic qualifications in education, few had first degrees in a content area. University-level training in the content area is certainly critical for panellists who must conduct task analysis on the assessments in order to judge the nature of student performances. Even when some judges did have postgraduate qualifications in education, they had little knowledge or experience in standard setting prior to the integrated training and workshop.

Also contributing to increased costs might be the need to have training separated from the actual standard-setting meeting. While the integrated design was cost-effective, reducing the entire procedure to one working week, it created tremendous difficulty for panellists who had to simultaneously learn and apply the concepts and

procedures. Separate training opportunities will ensure that panellists are properly prepared for the demanding tasks. Standard setting remains a critical test development procedure, necessary to ensure that performance standards are reported. Concern over standards is evident elsewhere in public examinations and universities. This is therefore a useful area of training and research in assessment. Arguably, some of the findings will be unique in the culture of a country such as Trinidad and Tobago with limited expertise and low institutional capacity. The need to support training at all levels is critical and universities have an important role in this regard. At this point, neither standard-setting procedures or large-scale assessment reporting is included in current course curricula. If national achievement testing is to be supported, capacity building and research at this level is certainly critical.

References

American Educational Research Association (AERA), American Psychological Association (APA), & National Council on Measurement in Education (NCME). (1999). *Standards for educational and psychological testing.* Washington, DC: American Educational Research Association.

Brandon, P. R. (2004). Conclusions about frequently studied modified Angoff standard-setting topics. *Applied Measurement in Education, 17*(1), 59–88.

Brandon, P. R. (2005). Using test standard-setting methods in educational program evaluation: Addressing the issue of how good is good enough. *Journal of Multidisciplinary Evaluation, 2*(3), 1–29.

Cizek, G. J. (1993). Reconsidering standards and criteria. *Journal of Educational Measurement, 30*(2), 93–106.

Cizek, G. J. (1995, April). *Standard setting as psychometric due process: Going a little further down an uncertain road.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco.

Cizek, G. J. (Ed.). (2001). *Setting performance standards: Concepts, methods, and perspectives.* Mahwah, NJ: Lawrence Erlbaum.

Cizek, G. J., & Bunch, M. B. (2007). *Standard setting: A guide to establishing and evaluating performance standards on tests.* Thousand Oaks, CA: Sage.

Ferrer, G. (2006). *Educational assessment systems in Latin America: Current practice and future challenges.* Washington, DC: Partnership for Educational Revitalization in the Americas.

Fiske, E. (2000). *Education for all: Status and trends 2000: Assessing learning achievement.* Paris: UNESCO,

Giraud, G., Impara, J. C., & Plake, B. S. (2005). Teachers' conceptions of the target examinee in Angoff standard setting. *Applied Measurement in Education, 18*(3), 223–232.

Greaney, V., & Kellaghan, T. (2007). *Assessing national achievement levels in education.* Washington, DC: World Bank.

Green, D. R., Trimble, C. Scott, & Lewis, D. M. (2003). Interpreting the results of three different standard-setting procedures. *Educational Measurement: Issues & Practice, 22*(1), 22–32.

Haertel, E. H., & Lorie, W. A. (2004). Validating standards-based score interpretations. *Measurement: Interdisciplinary Research and Perspectives, 2*(2), 61–103.

Hambleton, R. (2001). Setting performance standards on educational assessments and criteria for evaluating the process. In G. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives* (pp. 89–116). Mahwah, NJ: Lawrence Erlbaum.

Hambleton, R. K., Brennan, R. L., Brown, W., Dodd, B., Forsyth, R. A., Mehrens, W. A., Nellhaus, J., Reckase, M., Rindone, D., van der Linden, W. J., & Zwick, R. (2000). A response to "Setting reasonable and useful performance standards" in the National Academy of Sciences' "Grading the nation's report card." *Educational Measurement: Issues and Practice, 19*(2), 5–14.

Hambleton, R. K., & Pitoniak, M. J. (2006). Setting performance standards. In R. L. Brennan (Ed.), *Educational measurement* (4th ed., pp. 433–470). Washington, DC: American Council on Education.

Hansche, L. N. (1998). *Handbook for the development of performance standards: Meeting the requirements of Title I.* Washington, DC: United States Department of Education.

Hiemstra, R. (2001). Uses and benefits of journal writing. In L. M. English & M. A. Gillen, (Eds.), *Promoting journal writing in adult education* (New Directions for Adult and Continuing Education, No. 90; pp. 19–26). San Francisco, CA: Jossey-Bass.

Kane, M. T. (1994). Validating the performance standards associated with passing scores. *Review of Educational Research, 64*, 425–461.

Kane, M. T. (2001). So much remains the same: Conception and status of validation in setting standards. In G. J. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives* (pp. 53–88). Mahwah, NJ: Lawrence Erlbaum

Jaeger, R. M., & Mills, C. (2001). An integrated judgment procedure for setting standards on complex, large-scale assessments. In G. J. Cizek (Ed.), *Setting performance standards; Concepts, methods, and perspectives* (pp. 313–318). Mahwah, NJ: Lawrence Erlbaum.

McGinty, D. (2005). Illuminating the "black box" of standard setting: An exploratory qualitative study. *Applied Measurement in Education, 18*(3), 269–287.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *PIRLS 2006 International Report: IEA's Progress in International Reading Literacy Study in Primary Schools in 40 Countries.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Reckase, M. (2000). A survey and evaluation of recently developed procedures for setting standards on educational tests. In M. L. Bourque, & S. Byrd (Eds.), *Student performance standards on the National Assessment of Educational Progress: Affirmation and improvements* (pp. 44–71). Washington, DC: National Assessment Governing Board.

Skorupski, W. P., & Hambleton, R. K. (2005). What are panelists thinking when they participate in standard-setting studies? *Applied Measurement in Education, 18*(3), 233–256.

World Bank. (1993). *Caribbean region: Access, quality, and efficiency in education.* Washington, DC: Author.

Zieky, M. (1997). Is the Angoff Method really fundamentally flawed? *CLEAR Exam Review, 8*(2), 30–33.

A Model for 360^0 Teacher Evaluation in the Context of the CSME

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Abstract. With free movement of Caribbean professionals aross the region, individual Ministries of Education and regional institutions must be able to monitor their performances in the field. The primary intention of the proposed model is the objective evaluation of teachers' performances using the multiple perspectives of persons with whom teachers have a professional relationship. The authors offer their insights regarding the 360° approach to performance appraisal used in the United States and contrast it against the traditional format of teacher evaluation. The authors proffer the model as one option to increase objectivity in teacher evaluations and make recommendations about the implementation of this proposed evaluation method.

Introduction

Teacher evaluation has long been a topic of discussion for educators around the world. This paper furthers the discussion within the context of the Caribbean, and more specifically within the current milieu of the CARICOM Single Market and Economy (CSME), also called the Caribbean Single Market and Economy. The intent of the authors is to initiate dialogue on an alternative method of teacher and administrator evaluation. In light of the emergence of the CSME, the movement towards education for all, the spread of health-related concerns across the region, and the rapid expansion of electronic communication within institutions of higher education, the consideration of a new approach to teacher evaluation in timely to respond to the changing nature of the Caribbean landscape.

History and Geography of the Caribbean

The term *Caribbean* usually refers to the island nations that are located in the Caribbean Sea. However, Belize in Central America, as well as Guyana and Suriname in South America are also included in the group. Within the Caribbean itself, there are sub-groups organized according to culture, language, colonial affiliations, and trade and economic interests. The Caribbean Community (CARICOM) is one such group, comprised mainly of English-speaking countries that have come together to trade intra-regionally as well as internationally. At present, CARICOM members are redefining themselves in response to Vision 2020 and the establishment of the CSME.

The CARICOM Single Market and Economy (CSME)

At the 1998 Heads of Government meeting in Grenada, a decision was made to "transform the limited common market" that was in existence "into a fully fledged Single Market and Economy in the shortest possible time" (The Caribbean Single Market, p. 7). This was followed by the Revised Treaty of Chaguaramas of 2001, which provided for the reconfiguration of the separate domestic economies into a single economy. Provision was also made for joint regional action in the areas of capital market development, competition policies within the community, consumer protection measures, the creation and implementation of new regional institutions and policies, and a process of redress if countries felt that they were receiving inequitable treatment in the integration process. The key benefits for member countries include the free movement of goods and services, the right of establishment, a common external tariff, free movement of capital, a common trade policy, and free movement of labour.

The authors of CSME appreciated the "centrality of the deployment of the human resource" (The Caribbean Single Market, p. 11) as

a primary mechanism to induce Caribbean development, and the movement of skilled workers has been among the first initiatives implemented in most member states. At this time, the categories of workers who are free to move include university graduates, media personnel, artists, musicians, and sportspersons. As the number of categories increases, the role of accreditation agencies will become critical. In this concept paper, an evaluation process is being proposed which can support the movement of teachers and education administrators throughout the CARICOM region as is imagined by the CSME authors.

Teacher Evaluation in the Context of CSME

Teacher evaluation in the Caribbean has been in the main a single source approach (Manatt & Benway, 1998)—principal and teacher or department head and teacher. The movement of teachers and education administrators throughout the CARICOM region would be facilitated with the full implementation of the CSME. The importance of performance appraisals (teacher and administrator evaluation) would become more critical as persons move to work. These appraisals are also critical in helping CARICOM nationals address the stereotypes they hold of other CARICOM citizens. These stereotypes have been used to discourage regional people from accepting this free movement. The problem was highlighted in the following quote "Putting all political correctness aside, do you honestly trust the Jamaicans, the Haitians, the Trinidadians, etc. to run our economy on our behalf?" (Nassau Institute, 2005). At the level of the individual citizen, the question *Who is teaching my child?* would always receive more attention than *Who is preparing the national budget?* because it is more personal. We believe that an evaluation system which focuses on pedagogical competence, personal attributes associated with effective teaching, and the many variables in the diverse operating contexts will complement the movement towards standardized components of teacher training programmes and the regional accreditation of educators. The proposed model will facilitate data gathering in these three areas.

As citizens move within the region, there are fears about the rise in social problems, reduced access to jobs in one's own country, the loss of business and land, and the loss of individual cultures. Implementation of a 360°-evaluation model would allow CARICOM nationals the opportunity to determine the quality of teaching and the role models to which their children would be exposed.

Current Practices in Teacher and Administrative Evaluation

Purpose of Performance Evaluation

The purpose of performance evaluation for teachers is to assist teachers in developing and refining their skills for effective classroom teaching. Historically, in the CARICOM region and the United States (US), as in many countries, the process for completing evaluations has been hierarchical. That is, an administrator completed an evaluation with specific criteria related to the teacher's professional attributes and then reviewed the evaluation with the teacher (see Figure 1). The rating was then recorded in files lodged in an administrative centre. Formal administrator evaluations have not been the mode of practice in the US and we could find no examples of such evaluations in the countries that will participate in the CSME.

The most common method for collecting the evaluation data has been through classroom observations completed by the administrator of the school. Alternative forms of evaluation based on criteria identified in previous studies (Beerens, 2000; Lieberman, 1998; Matthews, 2000; Nolan & Hoover, 2004; Peterson & Peterson, 2006; Stronge, 2006) have not been used uniformly in the US, which is promoting standards-based teaching. Likewise, using standardized methods for the formal evaluation of school administrators such as principals, and district personnel such as superintendents in the US and school supervisors in the Caribbean, is a new phenomenon in educational practice.

The value of the traditional model for evaluating teachers is often debated: "Teacher evaluation systems have been a stable fixture of educational human resource management for decades, being used for both *quality assurance* (summative) and *professional learning* (formative) purposes" (Danielson & McGreal, 2000). The

positive aspects include efficiency because it is dependent on one evaluator's time. It fulfils the administrative requirement of performance appraisal by providing a record of professional practice. Administrative authority and decision making are reinforced, which maintains the hierarchy within the school building and district. Interestingly, research has shown that principal/administrator ratings are generally higher than student and parent ratings of teachers, so that this system appears to favour the ratings of teachers' work.

The advocates for change have identified the following negatives with the current teacher evaluation system:

1. The ratings rely on limited and subjective criteria and the measurements lack precision.

2. The process employs a top-down approach; however many administrators are limited in their knowledge of pedagogy and approaches to learning.

3. There is no differentiation between novice and experienced practitioners, and the current approach tends to be viewed as an administrative exercise rather than a tool for improving professional practice.

4. Too often, the process has worsened the already existing division between teachers and administrators.
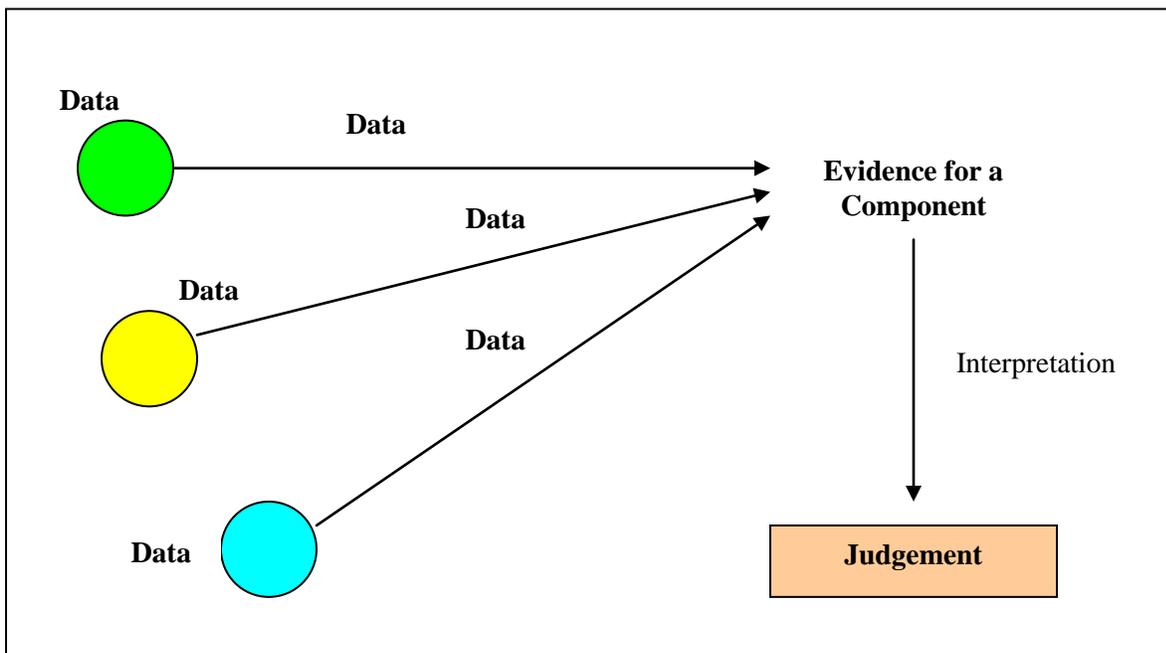

Figure 1. Traditional system for teacher performance evaluation.
Note. From *Teacher evaluation to enhance professional practice* (p. 75), by C. Danielson and T. L. McGreal. Princeton, NJ: Educational Testing Services, 2000. Copyright 2000 by Educational Testing Services.

360° Evaluation Model for Determining Teacher Performance

The 360° evaluation model is considered a highly effective evaluation process for enhancing employee development and professional growth (Edwards & Ewen, 1996). The model was developed and registered in the mid-1980s by Teams, Inc., and has been successfully implemented by over 90% of Fortune 500 companies. Its primary use has been in the business arena. The 360° evaluation model seeks to provide feedback about employee strengths and weaknesses using evaluation reports from their supervisors, peers, clients, and other persons with whom they interact in the conduct of their jobs. The feedback has not been used to determine

salary adjustments thus far in any of the organizations that have implemented it.

In our model, we are proposing that self-reports as well as reports from the administrator, parents, students, peers, and community and the results of student achievement be employed in the evaluation of teachers and administrators (see Figure 2). The reports would provide a basis for dialogue between the teachers and the administrators to arrive at a final evaluation rating. At present, there are attempts to gather multiple perspectives of faculty performance in collegial settings and in a few school districts, with varying degrees of success. The use of the results remains the biggest challenge to overcome for those systems that are employing this type of performance appraisal (Manatt, 2000; Manatt & Kemis, 1997). Manatt and Benway (1998, p. 19) made suggestions (see Table 1) about the data sources that can be employed to give feedback in the utilization of the 360° model in educational settings.

Table 1. 360-Degree Feedback Sources

For Teachers	For Administrators
Supervisor evaluation Self-evaluation Student achievement Peer feedback Student feedback Parent feedback	Supervisor evaluation Self-evaluation Student achievement Student feedback Student attendance Retention Teacher performance data Teacher feedback Parent feedback School climate

The authors do not suggest applying equal weights to each report in arriving at the evaluation rating of the teacher or administrator. The weights should be calculated based on the professional development needs of the teacher or administrator and the goals of the school districts and regional Ministries of Education, which in turn should be aligned to the goals of Vision 2020 and the CSME. Most importantly, is allowing the opportunity for the multiple voices of those affected by the work of the teacher or administrator to be included in the decisions about competency ratings.

Supporting a 360°-Evaluation Process in the Context of CSME

The authors believe that implementation of a model such as the one proposed would require widely publicized evaluation criteria and descriptors to all stakeholders; an established protocol for accessing evaluation data; commitment to the process by individuals, Ministries of Education, and teachers' unions; and increased input from Caribbean accreditation organizations. Input from organizations such as the Association for Caribbean Tertiary Institutions (ACTI), Association of Caribbean Higher Education Administrators (ACHEA), Caribbean Universities Network (CUN), and the Association of Caribbean Universities and Research Institutes (UNICA) is important if we are seeking to certify Caribbean educators who wish to move to work as facilitated by the CSME. Ongoing dialogue and training would be needed to train all stakeholders to use the evaluation tools effectively. All involved parties would be encouraged to collect the necessary evidence to support their ratings. The authors also propose that asset identification, rather than a deficit approach, be employed to formalize current practices of all stakeholders who are trusting schools to produce future Caribbean leaders.

Recommendations

1. The feedback design on competency and effectiveness for teachers and administrators

should be created by those who use the system. Seek input from Ministry personnel, National Parent Teacher Associations, school boards, measurement personnel, principals, teachers' unions, and community organizations.

2. Outline all required competencies in contractual documents given to teachers and administrators upon hiring. Outline the criteria for performance evaluation.

3. Stakeholders should understand how evaluation teams for the teacher and administrator evaluations would be selected.

4. Establish confidentiality contracts for those providing feedback in their own countries and throughout the region.

5. Establish a secure research-based protocol for collecting, scoring, and reporting data.

6. Train administrative personnel to assist those being evaluated to develop goals at the start of the cycle, synthesize the evaluation data, and provide feedback to improve the overall competency, efficacy, and effectiveness of educators throughout the union.
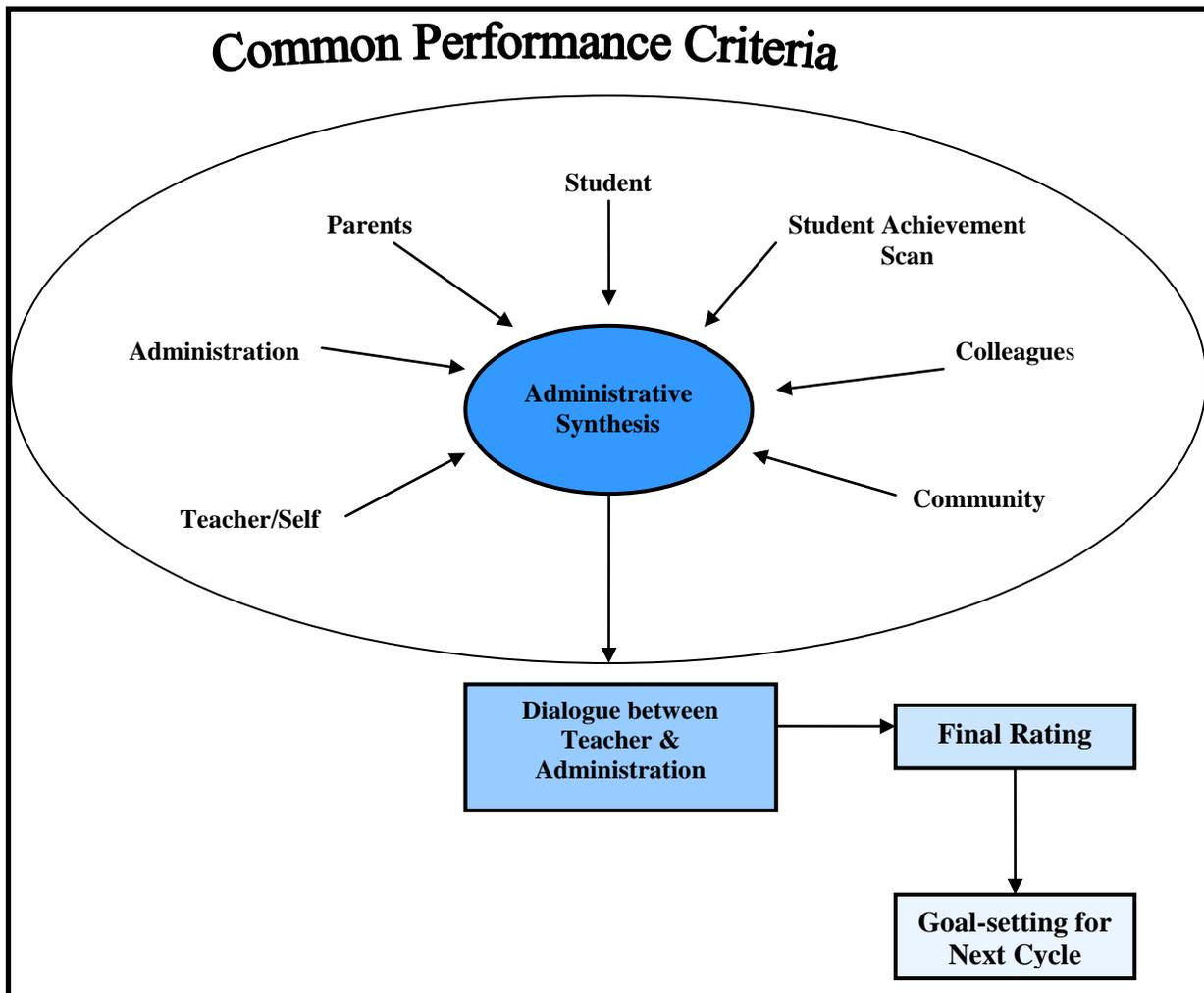

Figure 2. Performance evaluation within a 360° evaluation framework.
Note. Model created by S. Ortega, L. Baptiste, & A. Beauchemin. © Copyright 2007.

Conclusion

This paper describes an alternative to the current framework for conducting teacher and administrator performance evaluations. The 360° evaluation model offers an opportunity to include multiple stakeholders in the evaluation of teacher and administrator competency and effectiveness. This discussion is presented as a first step in promoting further dialogue in effective strategies to cultivate competent teacher and administrator mobility throughout the CSME, which meets the needs of the Ministries of Education.

References

Beerens, D. R. (2000). *Evaluating teachers for professional growth: Creating a culture of motivation and learning*. Thousand Oaks, CA: Corwin Press.

The Caribbean single market and economy: The way forward (Thirtieth anniversary distinguished lecture of the Caribbean Community, delivered by the Rt. Hon. Owen Arthur, Prime Minister of Barbados, at the Frank Collymore Hall, Bridgetown, Barbados on April 23, 2004). (2004). Retrieved from http://www.barbados.gov.bb/Docs/csme.pdf

Danielson, C., & McGreal, T. L. (2000). *Teacher evaluation to enhance professional practice*. Princeton, NJ: Educational Testing Services.

Edwards, M.R., & Ewen, A.J. (1996). *360 degree feedback: The powerful new model for employee evaluation & performance improvement*. New York: AMACOM.

Lieberman, M. (1998). *Teachers evaluating teachers: Peer review and the new unionism*. New Brunswick, NJ: Transaction Publishers.

Manatt, R. P. (2000). Feedback at 360 degrees. *School Administrator*, *57*(9), 10–11.

Manatt, R. P., & Benway, M. (1998). Teacher and administrator performance evaluation: Benefits of 360-degree feedback. *ERS Spectrum*, *16*(2), 18–23.

Manatt, R. P., & Kemis, M. (1997). 360-degree feedback: A new approach to evaluation. *Principal*, *77*(1), 24–27.

Mathews, J. (2000). When parents and students grade staff. *School Administrator*, *57*(9), 6–9.

Nassau Institute. (2005, May). *29 questions you should ask about CSME*. Retrieved from http://www.nassauinstitute.org/articles/article517.php

Nolan, J., Jr., & Hoover, L. A. (2004). *Teacher supervision and evaluation: Theory into practice*. Hoboken, NJ: Wiley.

Peterson, K. D., & Peterson, C. A. (2006). *Effective teacher evaluation: A guide for principals*. Thousand Oaks, CA: Corwin Press.

Stronge, J. H. (Ed.). (2006). *Evaluating teaching: A guide to current thinking and best practice* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Online Teacher Training and Upgrading Programmes for Science Teachers: Issues of Assessment

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Abstract. With many science teachers from the Caribbean migrating to more developed countries in order to take up more lucrative contracts, the need to increase the training opportunities for teachers has taken on greater urgency. Online learning is considered a convenient option to address this increased demand for in-service training and upgrading of teachers. While this form of course delivery has several strengths, there are several drawbacks that are of particular significance for training and professional development of teachers. This paper highlights some of the challenges with respect to the types of assessment activities and the management of the assessment process of one university online programme involved with the professional development of teachers. It discusses some implications for graduates of this programme moving on to higher educational opportunities, with an emphasis on science education and the assessment of students enrolled in online teacher upgrading programmes.

Background

Teacher education is viewed as an ongoing process of lifelong learning, with additional professional development called in-service teacher education (Resta, 2002). Some of the very critical issues being raised with respect to teacher education today include a general dissatisfaction with the teacher education programmes mooted by various governments regionally and internationally, as well as concerns being raised from within the profession, which urge the redesign of teacher education to strengthen its knowledge base and its connections to both theory and practice (Darling-Hammond, 2000). The worldwide shortage of teachers has raised concerns about teacher education opportunities. In recent times, one strategy used by developed countries such as North America and Britain to address this chronic teacher shortage is to actively recruit experienced, graduate trained teachers from developing countries such as those in the Caribbean. This has put additional strain on the already stretched resources of developing nations. The lack of resources has a significant impact on poor countries' potential to fund teacher education as they are also faced with other urgent social issues such as health and unemployment.

A major problem in Sub-Saharan Africa and South Asia is that while there is a shortage of teachers there is an increase in school enrolment. The Perraton, Creed, and Robinson, (2002) report on policy implications for the use of technology in teacher education programmes indicates that in developing countries, about half of their teachers are unqualified in terms of the standards for teacher education in their own countries. In many instances, many teachers have little more that secondary education. A major challenge is that developing countries are forced to do more with fewer resources, and so alternative pathways to teacher education have to be explored to carry out programmes of training that meet accepted standards. It is widely felt that technology offers hope in this regard.

The Jamaican Context

In some ways, the problems in teacher education faced by Jamaica mirror those of other developing countries such as those in Sub-Saharan Africa. One such is the level of training of the teachers in the system. Many teachers teaching at the

secondary level have the Teacher Diploma as their highest level of qualification. One medium-term goal of the Jamaican Government is the upgrading all the teachers in the system to at least the first degree level. Table 1 shows the level of training of science teachers in Jamaican secondary schools by school type.

Table 1. Distribution of Science Teachers by School Type and Level of Training

Level of Training	Science Teachers	School Type					Total
		AA	PJH	SH	US	TH	
Trained Graduate	Count	4	20	178	148	32	382
	% of Total	.3%	1.4%	12.9%	10.7%	2.3%	27.6%
Teacher Trained	Count	14	75	129	308	46	572
	% of Total	1.0%	5.4%	9.3%	22.3%	4.3%	41.4%
Pre-trained Graduate	Count	3	3	99	55	20	180
	% of Total	.2%	.2%	7.2%	4.0%	1.4%	13.0%
Pre-trained Teacher	Count	2	11	27	18	7	65
	% of Total	.1%	.8%	2.0%	1.3%	.5%	4.7%
Untrained Teacher	Count	4	14	50	97	19	184
	% of Total	.3%	1.0%	3.6%	7.0%	1.4%	13.3%
TOTAL	Count	27	123	483	626	124	1383
	% of Total	2.0%	8.9%	34.9%	45.3%	9.0%	100%

Key: AA – All Age schools; PJH – Primary and Junior High; SH Secondary High; US – Upgraded Secondary; TH – Technical High

Some of the critical issues relating to training that can be drawn from Table 1 are:

1. Only 27.6% of the science teachers in secondary schools are trained graduates, attaining the minimum training set by the Ministry of Education, Youth and Culture (MOEYC).

2. 40.6% meet the minimum content standards, having at least a first degree.

3. The secondary high schools have the largest portion of trained graduate and pre-trained graduate teachers among all the other school types.

4. The largest number of diploma trained teachers in need of upgrading to graduate level are in the upgraded high schools.

Of major concern is the shortage of science teachers in the system. This has been exacerbated as more secondary schools become upgraded and begin to offer science subjects. The number of schools offering Caribbean Secondary Education Certificate (CSEC) chemistry, physics, and biology has increased, with the greatest increase coming from among the upgraded secondary schools. In the case of biology, for example, the number of upgraded secondary schools entering candidates for the CSEC examinations increased from 36 schools with 698 candidates in 2003 to 53 schools with 842 candidates in 2005. The largest numbers of candidates sitting CSEC biology, chemistry, and physics examinations continue to come from the secondary high schools—3,462, 2,689, and 2,392, respectively, in 2005. Formerly, only a few of the upgraded secondary schools offered any of the traditional science subjects, with the most likely subject being biology. Most candidates from these schools doing CSEC science examinations sat the integrated science examination. With the new status of high schools as a result of the Jamaican Government's upgrading policy directive for all secondary schools, these schools have begun to offer other science subjects (chemistry, physics, and biology). This has led to an increase in the demand for specialist teachers to teach biology, chemistry, and physics. (Jamaica. National Council on Education, 2003–2005)

Traditionally, Caribbean people have migrated to places where they perceive the grass to be

greener. Amidst plans to improve the cadre of secondary school teachers, the issue of teacher shortage, and in particular science and mathematics teacher shortage, has become compounded in recent times as many teachers have migrated to take more lucrative positions in developed countries. The Caribbean Single Market and Economy (CSME) is likely to create additional opportunities for such movement of skilled professionals.

A third issue is that of the rate at which teachers are being trained to stem the exodus of teachers from the system. The various teacher training institutions have not been able to keep pace with replacing the need for science teachers. Table 2 shows that the numbers of science teachers being trained at teachers' colleges have

been very low. The majority of the teachers in training do general science—the science option that equips them to teach integrated science to Grade 9 level. Only the students who do the science options in biology, chemistry, or physics are equipped to teach up to Grade 11. Usually, these students are trained in two areas of specialization. Since 2004, the number of students entering and completing the three-year college diploma programme has shown the most marked difference between 2005 and 2006, with a substantial reduction in the number of students completing the programme in 2006 over that in 2005. Even more worrying is the number of teachers being trained to teach physics and the low percentage of teachers being trained to teach up to Grade 11.

Table 2. Science Trained in Years 1 and 3 in Teacher Training Institutions for the Period 2004–2007

Date	TT Institution	No. in Y1				No. in Y3				Total	
		Bio	Ch	Ph	GS	Bio	Ch	Ph	GS	Y1	Y3
06/07	Mico and Church	10	13	2	44	5	14	9	36	69 GS 63% BCP 37%	64 GS 56% BCP 44%
05/06	Mico and Church	6	8	4	59	17	18	3	62	77 GS 77% BCP 23%	100 GS 62% BCP 38%
04/05	Mico and Church	7	14	8	42	15	15	8	59	71 GS 59% BCP 41%	97 GS 61% BCP 39%

The Role of UWI in Teacher Education

In Jamaica, pre-service training or initial teacher training has been primarily carried out by teachers' colleges. In-service training has been offered by the Department of Educational Studies (DES) at The University of the West Indies (UWI), through the Bachelor of Education (B.Ed.) programmes for primary and secondary trained teachers. Science teachers whose initial training was in General Science, as well as those trained to teach the traditional science subjects, have upgraded their pedagogy and content knowledge through this programme. Up until 2002, this was done full time by the face-to-face programme. The relatively low annual numbers of registered students for this programme have also shown a general decrease, going from 15 registered students in 2002 to 6 in 2006 (Table 3)

In the most recent White Paper that outlines the policy directives, the Government of Jamaica has

identified education and training as priority areas. Since 2002, in addition to the established teacher training mechanisms, the Government of Jamaica has invested in offering an in-service B.Ed. programme for the island's secondary teachers to be delivered by distance/online modality. The programme is offered by the DES at UWI, Mona. The Government of Jamaica funded the tuition fees of the students registered for this programme, which was intended to last five years but was extended by an additional year in 2006.

Table 4 shows that more science teachers are completing degree programmes with the advent of the B.Ed. Distance. It seems evident that the system will benefit from this added format of training in the long run, but Table 4 reveals that there are still gaps in the training of physics teachers that must be plugged to satisfy the needs of the secondary system.

The DES, Mona, in responding to the needs of the nation and the region, is currently attempting

to improve the rate of teacher education opportunities through an expansion of the B.Ed. Distance programme. However, there are lessons to be learnt from current practice that are worth exploring. This paper therefore examines some of the issues surrounding assessment of the present online teacher education programme offered by the DES Mona, and proposes some recommendations for the training of science teachers as the programmes are being expanded.

Table 3. Science Education Face-to-Face and Distance Education Registration Data 2002–2006 by Programme

Programme	Year									
	2002–03		2003–04		2004–05		2005–06		2006–07	
	F/F	D	F/F	D	F/F	D	F/F	D	F/F	D
B.Sc. Ed.	11	-	11	-	4	-	6	-	1	-
B.Ed.	4	21	8	19	7	24	6	27	5	39
Grand Total	15	21	19	19	11	24	12	27	6	39

Table 4. Science Education Distance Education Programmes Registration Data 2002–2006 by Subjects

Subjects	Year				
	2002–03	2003–04	2004–05	2005–06	2006–07
Bio	11	15	18	21	26
Chem	4	4	2	4	10
Physics	6	0	4	2	3
Grand Total	21	19	24	27	39

The B.Ed Distance programme is now offered through a combination of self-study materials, print materials, tutorials, electronic mail, face-to-face lectures, and practicals (Xuereb & Peart, 2005). This equates to what is described as "blended learning" (Perraton et al., 2002).

Research into distance education has shown success in its use for all four regular elements of the teacher education curriculum, namely, general education, improving knowledge of subject, pedagogy and understanding of how children learn, and development of practical skills and competencies. Notwithstanding, these programmes pose some challenges for maintaining quality, particularly as it relates to assessment. With an increasing number of teachers completing first degrees, there is also an increasing demand for pursuing graduate degree programmes. Given the leadership roles that persons with graduate and postgraduate degrees have traditionally been asked to assume, it is critical that the standards of such qualifications be maintained.

Science Teacher Education and Assessment

According to Wenglinsky and Silverstein (2007), four essential components of science teacher education are: (a) equipping teachers with adequate laboratory skills, (b) hands-on learning, (c) training in the use of instructional technology to enhance course delivery, and (d) frequent formative assessment. It is on this fourth area of assessment that the rest of this paper will be focused, as this has significant implications for quality.

Ramsden (1992) argues that the nature of the academic task, requiring active rather than passive learning, will facilitate deep rather than superficial learning, an expectation of a university education. The idea of the nature of the academic task is linked to an increasing body of research (Black & Wiliam, 1998, 2006; Cowie & Bell, 1999; Shepard, 2000; Torrance & Pryor, 1998), which points to the centrality of formative assessment in enabling deep learning. Black (1986, 7) suggests that formative assessment is expected to have an impact on teaching and learning as it is conducted during instruction so as to monitor progress with a view, where appropriate, to altering the final outcomes. Cognitive learning theorists (Bransford & Vye, 1989; Davis, Maher, & Noddings, 1990; Wittrock, 1991) argue that formative assessment is integrated within the teaching/learning process,

and some of the responsibility for monitoring and changing performance is shifted to the learner.

Arising from research into formative assessment with teachers engaged in the Kings, Medway, Oxfordshire Formative Assessment Project, which is coordinated by the Assessment Reform Group (ARG) in the United Kingdom, Black and Wiliam (2006) describe the changes in the students' roles as learners as significant in the reform of classroom learning. They identify three key features of formative assessment as (a) regular feedback, (b) opportunities for revision, and (c) improved quality of learning and understanding. The ARG equates formative assessment with assessment for learning (Gardner, 2006), which will enable them to "plan for assessment; observe learning; analyze and interpret evidence of learning; gives feedback to learners and support learners in self assessment" (James & Pedder, 2006, p. 29)

It seems evident that teacher education programmes should equip teachers with those skills. It is my view that the assessment activities of the courses in the B.Ed. Distance programme can and ought to be used to develop these assessment competencies among the teachers, such that the teachers are equipped to use assessment to improve teaching and learning. In this regard, I concur with James and Pedder (2006) that such deep-seated changes in orientation are only likely to be accomplished through a process of learning by participation. Teachers need to be provided with opportunities to practise these new roles. In-service teacher education programmes such as the B.Ed. Distance provide ideal opportunities for teachers in training to apply, practise, and reflect on the use of these skills. Teachers in training need to experience the phenomenon of assessment for learning so as to enable them to do likewise, and the assessment activities should be embedded in what Shepard (2000) describes as "the dilemmas of practice." This should provide opportunities for them to critically examine aspects of their own teaching against established standards.

I further contend that there is need for equivalence of online and face-to-face programmes so as to maintain standards, and that with teacher education this cannot be compromised. This is particularly so as teachers seek to be upgraded not just to meet the requirements of various governments but,

ultimately, to improve their practice and impact positively on the quality of teaching and learning. Additionally, graduates of online and face-to-face programmes desire to pursue graduate programmes that require competencies of learning autonomy and critical analysis, which should be developed by this and any other university programme.

Two critical questions that remain to be asked therefore are:

1. To what extent has the B.Ed. Distance science education programme been able to address the assessment requirements for training science teachers discussed previously?

2. What steps should be taken to ensure that there is equivalence in the assessment required in the B.Ed. face-to-face and online science programmes in order to maintain standards?

The B.Ed. science programme is comprised of four different types of courses: science content, core education, specialization, and university foundation courses. Issues of assessment discussed hereafter relate to the first three types of courses.

Types of Assessment Used in the B.Ed. Science Programme at UWI

Formal Assessment

Arising from work done in Murdoch University in Australia, Phillips and Lowe (2003) have identified a wide range of assessment activities used for face-to-face programmes that have been modified to be successfully used in online teaching. It is widely established that one way to improve the validity of assessment is to increase the number and variety of assessment activities. However, in many disciplines and universities, examinations continue to be the dominant form of assessment. This is the case for the B.Ed. Science Education programme and, in particular, the science content courses. There is some variation in the way the science specialization courses are assessed versus the science content courses. These differences are outlined as follows:

1. For the most part, corresponding face-to-face and online science content courses are assessed in the same way—to include various

combinations of written coursework, microteaching, seminar or other types of presentations, in-course tests, practical work, and final examinations.

2. For introductory online science content courses, in-course tests—usually computer-marked multiple-choice items—are done face-to-face at the UWI Distance Education Centre (UWIDEC) sites or online. For advanced courses, the items of in-course tests are similar to that of the final examinations. All final examinations, which are of the "closed-book" type, consisting of guided essay-type questions, are done on campus for science content courses.

3. For online and face-to-face introductory science content courses, in-course tests are worth 10%. Two such are done. For advanced courses, in-course tests are worth 15-20%, as is the case for the labs.

4. For online and face-to-face science content courses, final exams are worth 60–70% for advanced courses and 75% for introductory courses.

5. The dominant form of coursework assessment in the education courses is written papers, in which students are required to use skills of arguing, cite relevant supported evidence, and write critically.

6. The coursework assignments for the face-to-face and online courses are usually similar. The number of assignments varies from course to course, with the minimum being two pieces of coursework.

7. Where oral presentations are required for face-to-face courses, these have not always been carried out for online courses. In all but one science education course, the microteaching component has been eliminated and replaced with more traditional forms of assessment. The seminar presentation in another course has been replaced by a PowerPoint presentation of the seminar content. These changes have been mainly due to resource constraints and the logistics of scheduling face-to-face activities at times convenient for all concerned. Usually, teachers are required to make their way to the UWI campus with whatever teaching aids they may need for the microteaching exercise. This is an additional cost to the teachers.

8. With respect to the number of assessment activities, shorter tasks are more suitable for online learning as they have a narrower focus and can be completed in a shorter time by students. In order to adequately sample the assessment domain of the course, this will likely require more assessment activities than traditionally given in the face-to-face programmes. In one science education course, for example, the face-to-face component consisted of three pieces of coursework while the corresponding online component was broken down to consist of five pieces. This was done in the second year of running the course due to the challenge that was experienced during the first year. While this provided for increased depths of responses to important aspects of the course, it was met with greater resistance by the students.

Informal Assessment

Whereas both face-to-face and online programmes offer opportunities for informal assessment, it is clear that maximizing the use of such opportunities is reduced online. Traditionally, teachers rely heavily on oral rather than written communication for informal assessment. As teachers interact with students, opportunities are created for probing students' responses and redirecting questions to facilitate and deepen learning.

Challenges linked to the Assessment of Online and Face-to-Face Programmes

Both face-to-face and online programmes offer opportunities for broadening types of assessment activities used. Perhaps more use can be made of the development of online quizzes in education courses for self-assessment. Much of the self-instructional materials in the online courses require directed reading and reflection on what was read, and application of new ideas to classroom practice. Students are usually required to state their position on particular topics in discussion forums, which take the place of

tutorials or class discussion in the face-to-face modality. The participation in these online activities is relatively low and as such has not met the objectives of the assessment activity. In cases where face-to-face tutorials are held to support the online programme, attendance and participation are generally higher.

Through participation in discussion forums and chat sessions, the online programme has the potential to enrich feedback through peer and self-assessment. This is not maximized, perhaps because the teachers themselves come to the learning environment with behaviourist expectations of teaching and learning. Many are hesitant to critique the presentations made by other participants, and still many seem to avoid posting their opinions online for all to see. Participants seem not to be satisfied that feedback is in fact given unless it comes via a response from the tutors.

In some of the self-assessment activities online, students are required to try a particular teaching technique or approach to a class they are teaching and report on their results in the discussion forums. This approach supports opportunities for revision and is likely to improve quality of learning. In the face-to-face component, students are required to reflect on previous teaching/learning episodes or view and analyse video-taped cases. Where online students have managed to do the relevant reading and understand the theory, there is clear evidence that they have benefited from the exercises. However, these cases are too few for comfort and there is cause for concern here. Some of the reasons for the differences may be due to the inadequate use made of the discussion forums for examining and clarifying issues.

In many cases, the overall quality of the assessment activity is affected by technology-related factors such as the students' computer skills and others linked to the Internet service provider. While many students have basic typing skills, their ability to complete more complex operations, such as developing tables, producing PowerPoint presentations and posters, and using the Internet to source materials, significantly reduces their ability to produce quality assignments.

On the other hand, technology significantly enhances the potential for written feedback to the students in a timely manner. Students are able to go online and view their grades with little difficulty. Some of this technology is also used by some lecturers for the face-to-face programmes. However, instances where assignments are uploaded for marking pose challenges for second marking. To get around this, some students are often required to submit soft copies online and a hard copy at the UWIDEC sites, which adds its own set of administrative challenges.

Uploading assignments poses other challenges for some students as the version of the operating system being used may not be compatible with that being used by the tutor. In some instances, the cost of Internet service limits the extent to which students can remain online for discussion in chat sessions and participation in discussion forums.

Many of the technology-related problems are likely to decrease as computers become more widely used. Indeed, there is evidence of this in the performance of successive cohorts of students in the programme already. Sustained staff and student development activities will likely address the problems of online marking and student participation, while policy positions on online assessment will have to be developed to address the problems of second marking. The use of more blended learning opportunities, especially for tutorial support, seems necessary to provide more opportunities for oral communication. As funds are made available, there will be need to incorporate more advanced technologies such as audio and video conferencing facilities.

Pedagogical Issues Related to Assessment

The discipline of science is distinctive in the centrality of practical work to conceptual understanding of science. The development and acquisition of practical skills should not be seen as separate from theory. Practical work, when properly designed, has the potential to develop inquiry skills through hands-on learning. Teachers need to become proficient in the development of those skills to enable improvement in practice (Wenglinsky & Silverstein, 2007). The practical components of the science content courses are designed to develop these skills and facilitate a more comprehensive understanding of the theory. This is most likely to occur if practical work is conducted in tandem with theory so as to ensure

understanding and application of concepts. Ideally, therefore, practical courses should be run parallel to science theory courses to facilitate this integration.

The science content courses are generally offered using the face-to-face modality during the summer for biology and physics, as it is established that such skills cannot be developed online. Phillips and Lowe (2003) argue that it is the online teaching, rather than the online assessment, that is inappropriate as practical skills can only be developed in a face-to-face context. For the most part, therefore, the practical components are being done alongside the theory. The chemistry theory courses have been developed for online delivery and are offered as such. However, the practical courses are done face-to-face in the summers. Students will normally do two chemistry courses before doing the corresponding practical courses. Ironically, therefore, the B.Ed. Distance chemistry courses place the students at a disadvantage by delivering courses online, as it is not possible to do the practical components of the courses concurrently with the theory courses as in the face-to-face mode. While there is no guarantee that by merely juxtaposing both aspects of the course there will be improved learning (there is no evidence to suggest that this happens in the face-to-face programmes, and perhaps there is need for research in this area), there is a sound pedagogical basis for bringing the courses nearer to each other. This will likely reduce the alienation that many students experience as they come to practical lessons.

The Chemistry Department at UWI, Mona, makes some allowances for this seeming inequity by delaying the final examinations for the courses taught during Semesters 1 and 2 until after the practical courses are completed in the summer. While this situation is still not ideal, it does serve to give the students some opportunity to integrate both theoretical and practical components of the courses. Perhaps this possible alienation might be reduced by running practical courses for chemistry on weekends but, certainly in Jamaica, this would necessitate ensuring adequate laboratory facilities in the various regions from which the students are drawn. This would mean closer collaboration between UWI and other community or teachers' colleges across the country. While this would

serve as an opportunity for upgrading the institutions, and therefore an overall improvement in the education system, there are significant cost implications involved here. Project funding would have to be sought to address this need. There is no short-term solution to this.

The development of teachers' skills to plan and organize for practical work is also addressed by one science education course entitled "An Introduction to Secondary School Science Practicals." The course is designed to "sensitize participants to the inadequacies in conventional practical work at the secondary level with special focus on the CXC syllabus" and "equip participants with the relevant procedural knowledge and skills to effectively teach secondary school science" (ED34Q Course Outline 2006). A comparison of how the two courses have been assessed for the 2006–2007 academic year is presented in Table 5.

Both online and face-to-face courses offer a variety of assessment activities. A significant component of this course is grounded in practice and teachers get hands-on practice for developing practical activities and mark schemes. While the face-to-face students benefit from the peer review and discussion of the various components of the course, this is not as evident in the online version of the course for the same reasons discussed earlier. The online students have the added benefit of having the seminar presentations available for viewing when they choose. They are able to revisit the presentations on demand, thereby increasing opportunities for revision. This is not so for the face-to-face students who have no opportunity for obtaining the content of a seminar if they miss the class. In addition, the seminar used can be carefully selected and revised from year to year as more and more students complete their presentations.

Conclusion

This paper has only examined two of the four types of courses in the B.Ed face-to-face and distance programmes offered by the DES, Mona. It is certainly clear that there are variations in how the face-to-face and distance courses are assessed. The issues of group versus individual component, the numbers and types of assessment activities, and the actual supervision of hands-on practical

related activities are clear differences. These variations seem to be greater in the science

education courses than in the science content courses.

Table 5. Assessment Activities of an Online and Face-to-Face Science Education Course

Description of Coursework	Face-to-Face (3 credits)	Distance (3 credits)
Assignment 1	• Group component – Compilation of nine practical activities for different subjects. Presentation of both electronic and hard copies (10%) • Individual component – analysis of practical activities. Essay clarifying terms related to assessment of practical work (20%)	• Case analysis of a science lesson (10%) • Individual work • Written presentation – 500 words • Uploaded for grading • Marked online
Assignment 2	• Microteaching – Linked to conduct of a practical demonstration (15%) • Individual or pair depending on number of students	• Essay clarifying terms related to assessment of practical work (10%) • Written presentation – 500 words • Uploaded for grading • Marked online
Assignment 3	• Seminar presentations • Pair component – Development of a 50-minute seminar presentation to include an interactive component on assigned topic (10%) • Written component of presentation inclusive of handouts (10%) • Individual evaluation of seminar series (35%)	• Individual – compilation of six practical activities for different subjects and analysis of practical activities presented in tabular format • Presentation of both electronic and hard copies (30%)
Assignment 4		• Written paper analysis of problem given to assess planning and design (20%) • Uploaded for grading
Assignment 5		• Develop a PowerPoint presentation on a given seminar topic. The seminar should have some interactive component (15%) • Analyse PowerPoint presentations of previous seminars using some preset criteria and the literature (15%) • Upload and submit hard copy at site

One question that might be asked is whether similar assessment formats are necessary for equity in assessment. However, a more critical question must be whether both programmes (online and face-to-face) serve to develop essential competencies in the teachers and the extent to which the skills in critical thinking and practical work are adequate for the teachers. Are teachers developing a deeper understanding of assessment for learning and are the assessment activities actually enhancing deeper learning among teachers? Additionally, should there be one mode of submission of assignments for online students, and how manageable is the practice of dual-mode

submission of assignments when the programme is expanded?

The recent review of the B.Ed. distance programme did not fully explore those issues (Xuereb & Peart, 2005). It seems that as the DES, Mona, seeks to expand the offering of its B.Ed. Distance programme, there must be discussions on the issues of policy relating to online assessment, which will look at routine aspects of second marking, mode of submission of assignments, and submission deadlines, as well as issues of equivalence of the assessment carried out in online and face-to-face programmes. In addition, course developers and course leaders are encouraged to

carefully consider these issues as courses are being reviewed.

References

Black, H. (1986). Assessment for learning. In D. Nuttall (Ed.), *Assessing educational achievement* (pp. 7–18). London: Falmer Press.

Black, P., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, *80*(2), 139–147.

Black, P., & Wiliam, D. (2006). Assessment for learning in the classroom. In J. Gardner (Ed.), *Assessment and learning* (pp. 9–26). London: Sage.

Bransford, J. D., & Vye, N. (1989). A perspective on cognitive research and its implications in instruction. In L. B. Resnick, & L. E. Klopfer (Eds.), *Towards the thinking curriculum: Current cognitive research* (1989 Yearbook for the Association for Supervision and Curriculum Development; pp. 173–205). Alexandria VA: Association for Supervision and Curriculum Development.

Cowie, B., & Bell, B. (1999). A model of formative assessment in science education. *Assessment in Education, 6*(1): 101–116.

Darling-Hammond, P. (2000). How teacher education matters. *Journal of Teacher Education, 51*(3), 166–173.

Davis, R. B., Maher, C. A., & Nodings, N. (Eds.). (1990). *Constructivist views on the teaching and learning of mathematics* (Special issue of *Journal for Research in Mathematics Education*; Monograph No. 4). Reston, VA: National Council of Teachers of Mathematics.

Gardner, J. (Ed.). (2006). *Assessment and learning*. London: Sage.

James, M. & Pedder, D. (2006). Professional learning as a condition for assessment for learning. In J. Gardner (Ed.), *Assessment and learning (*pp. 27–43). London: Sage.

Jamaica. National Council on Education. (2003–2005). *Performance of Jamaican students in the Caribbean Secondary Education Certificate examinations.* Kingston, Jamaica: Author.

Perraton, H., Creed, C., & Robinson, B. (2002). *Teacher education guidelines: Using open and distance learning*. Paris: UNESCO.

Phillips, R., & Lowe, K. (2003). Issues associated with the equivalence of traditional and online assessment. In G. Crisp, D. Thiele, I Scholten, S. Barker, & J. Baron (Eds.), *Interact, Integrate, Impact: Proceedings of the 20th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education (ASCILITE), Adelaide, December 7-10, 2003* (pp. 419–431). Adelaide: Author.

Ramsden, P. (1992). *Learning to teach in higher education.* London: Routledge.

Resta, P. (2002). *Information and communication technologies in teacher education: A planning guide.* Paris: UNESCO.

Shepard, L. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4–14.

Torrance, H., & Pryor, J. (1998). *Investigating formative assessment: Teaching, learning and assessment in the classroom*. Buckingham, UK: Open University Press.

Wenglinsky, H., & Silverstein, S. C. (2007). The science training teachers need. *Educational Leadership*, *64*(4), 24–29.

Wittrock, M. C. (1991). Testing and recent research in cognition. In M. C. Wittrock & E. L. Baker (Eds.), *Testing and cognition* (pp. 5–16). Englewood Cliffs, NJ: Prentice Hall.

Xuereb, K., & Peart, M. (2005). *Evaluation of the Bachelor of Education at the University of the West Indies*. Mona, Jamaica: Department of Educational Studies, UWI.

Part 6

Professional Development of Educators

Attributes of Internality:
An Alternative Path to Teacher Effectiveness

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Abstract. The literature reports that individuals with an internal locus of control (LOC) are more effective in the workplace than externals, and that it is possible to increase individuals' LOC internality through training. Hence, the researchers have proposed "Teachers' Internality Training," a new alternative type of training, to increase the effectiveness of teachers. This paper describes qualitative and quantitative research with 220 Jamaican teachers that expanded the traditional LOC construct to expose the attributes of LOC that can be targeted by teachers' internality training. The paper also shows how this new expanded LOC construct suggests possible mechanisms for accomplishing this training. The significance of this paper is that it opens the possibility of a new type of alternative training for teaching effectiveness.

Introduction

Teachers' locus of control (TLOC) is defined as teachers' perception of their personal control and responsibility for students' academic and behavioural outcomes (Kremer & Lifmann, 1981; Rose & Medway, 1981). One might argue that the basic responsibility of teaching is to promote change in students. To accept this responsibility, teachers should recognize that promoting student change is accomplished through their efforts. Hence, it is important for teachers to believe in a "direct relation between what they do and what their students learn. Without this belief, learning may be perceived as the result of random events for which the teacher holds no responsibility" (Sherman & Giles, 1981, p. 139).

Teachers' locus of control evolved from the concept of "Locus of Control," a widely used concept that concerns individuals' beliefs about who or what influences important outcomes in their lives. Locus of control can be applied broadly as a means of explaining individuals' global expectations spanning many situations, or narrowly to explain individuals' expectancy of an event within a specific context. Rotter's (1954) social learning theory, which provides the structure of the locus of control construct, has four main components for predicting behaviour: behaviour potential, reinforcement value, expectations, and the psychological situation. These components will assist in expanding our understanding of the manner in which LOC influences behaviour:

- Behaviour potential: There are multiple behaviours one can engage in; there are behaviours with high potential or low potential of occurring in a given situation. The probability of occurrence depends on the individual's belief system and perception of his/her role and the situation.

- Reinforcement values: Reinforcers are presented as consequences of behaviours and are considered to influence the likelihood of the occurrence of behaviour. The value of a positive reinforcement can be defined as the degree of preference for specific stimuli, and is determined by its importance to the individual relative to other anticipated reinforcements.

- Expectations: The behaviour of a person is affected by his/her expectations. Social learning theorists regard expectations as the prime determinant of behaviour. According to Rotter (1954), such expectations are influenced by previous experiences. Expectations are a person's anticipation that goals will be realized. Phares (1976) stated that past experiences reinforce the expectations of the consequences of an individual's behaviour. Therefore, successful past experiences with a given behaviour will influence an individual's

expectancy of the success of the behaviour in the future.

- Psychological situations: These are situations in which one can "identify the cues that may directly affect the expectancies and reinforcement values for a given person…. the crucial thing is to determine both the specific and general effects on behaviour that a given situation will have by the manner in which that situation affects expectancies and reinforcements" (Phares, 1976, p. 17). This identification of cues is influenced by the individuals' memory of past experiences.

Integrating the Components of the Model

According to Rotter (1954), reinforcement strengthened the expectancy that a particular behaviour or event will be followed in the future by that reinforcement. When the behaviour fails to be reinforced expectancy is reduced. Individuals with internal LOC believe that their destinies are in their control and they are able to make things happen (Parkway, Greenwood, Olejnik, & Proller, 1988). Conversely, persons with external LOC believe that they are not in control of their destinies and external forces cause the events of their lives. The cognitive element of LOC is evident because, as Rotter (1954) proposed, it was not the reinforcement itself that increased the frequency of behaviour, but a person's expectations about what brought about the rewards (Stipek, 2002). If individuals did not believe that the rewards were as a result of their personal characteristics, the influence of the rewards on future behaviour would diminish.

Linking LOC Concepts to Teachers' Characteristics

Reinforcement values in Rotter's (1954) theory are linked to the probability of success and also to a person's needs and association with other reinforcements. Therefore, a teacher who sees teaching as a lifelong career because he/she places a high value on the teaching profession is likely to believe that his/her effort will have an impact on his/her students. This teacher's efforts in his/her class (i.e., preparation for his/her class) will be determined by the expectation that hard work,

effort, and preparation result in valued reinforcements.

Expectations "are not always accurate in that they are based on subjective perceptions of the probability that behaviour will be reinforced" (Stipek, 2002, p. 59). Expectations in a particular situation are not only determined by the teachers' perception of the reinforcement in that situation, but are also determined by generalized expectations based on experiences in other similar situations. As a result, Brown (1997) stated that long before teachers start their training, they are exposed to certain situations "which form predispositions, develop perspectives, and create images or models of teaching, all of which can exert a powerful influence on the future teacher" (p. 5). These situations are likely to shape teachers' beliefs or orientations about their influence or effect on students' behaviour and their academic achievements. Therefore, teachers bring to the classroom situations their own generalized belief system.

Kremer and Lifmann (1982) noted that teachers with internal and external LOC displayed different teacher characteristics in their professional work. According to these authors, an internally oriented teacher would make a remark such as, "if you work harder, you'll get better results," whereas an externally oriented teacher may not direct his/her efforts at all towards low achievers because he/she may attribute students' achievements to external forces.

Kremer (1982) cited studies which showed that internally oriented teachers display the following characteristics to a greater degree than teachers who are rated as externals: they are more guided by inner sources, face challenges with more persistence, seek for new information with regard to innovation, use new information, and try to induce change in the classroom. In other words, internally oriented teachers are more flexible in their methods and materials used in the classroom. The externally oriented teachers tend more to attach importance to authority, therefore they will exert their own authority; they are not decision makers but are guided in decision making by their superiors; they will tend to attribute failure to outer sources such as curricula, students, and situational constraints rather than to themselves.

According to Kremer (1982), the behaviour and attitude displayed by internal teachers are

consistent with the progressive views of education, whereas the attitudes and behaviour of the externally oriented teachers are in accord with the traditional approach to teaching. The writer concluded from his results that external and internal loci of control were found to significantly explain the variance in traditional and progressive attitudes respectively. Table 1 illustrates the results from Kremer's studies. One will observe from the table that internals score higher than externals on progressive teaching. Table 1 shows that "externals" score higher than "internals" on traditional teaching and on traditional attitudes. The only non-significant difference is in the area of progressive attitudes.

Table 1. Differences Between Externals and Internals Re Teaching and Attitudes

		X Bar	S.D.	t
Progressive Teaching	Externals	35.42	5.27	-3.5*
	Internals	60.21	17.97	
Traditional Teaching	Externals	60.92	12.53	4.57**
	Internals	34.21	9.03	
Progressive Attitudes	Externals	36.71	4.16	-1.90
	Internals	44.85	2.54	
Traditional Attitudes	Externals	46.28	3.25	3.64*
	Internals	27.42	13.31	

Parkway et al. (1988) also noted a study by Ashton, Webb, and Doda (1983), which demonstrated that teachers who were internal in their LOC tended, to a greater degree, to take responsibility for students who were unmotivated and who were low achievers. In this experiment, they used the TLOC scale that was developed by Rose and Medway (1981). These researchers observed a significant correlation between teachers' belief that this can succeed with difficult or unmotivated students and the teachers' tendency to accept personal responsibility (internality) for students' success (r = .31, p < .05) and the teachers' tendency to accept responsibility for student failure (r = .36, p < .01).

These attitudes displayed by teachers could very well affect their pupils' perception of themselves as academic performers. An internally oriented teacher is likely to take responsibility for a student's failure and therefore may be apt to strive to improve his/her teaching; whereas the external, who is not likely to take responsibility for a student's failure, is not likely to strive to improve his/her teaching. In other words, external teachers are likely to be more inflexible and more mechanical in their methods.

Bein, Anderson, and Maes (1990) concluded from their results that teachers who were more internal in their LOC experienced higher levels of job satisfaction. They explained that a greater sense of personal control in the school environment contributed to an overall feeling of satisfaction with teaching as a career.

Cheng's (1994) findings agreed with the results from Parkway et al.'s (1990) study that internals believed that they had greater control over their working environment and therefore were more committed to their school. They had more power in a situation because they perceived a greater number of alternatives than did externals in a situation of choice, and, additionally, internals tended to have a more satisfied relationship with their colleagues.

Externals found extrinsic rewards less satisfying. Cheng's (1994) explanation was that externals felt powerless to achieve greater extrinsic rewards and consequently might be dissatisfied with what they had. On the other hand, teachers who were internally oriented in their LOC tended to believe that extrinsic rewards matched their efforts, resulting in an enhanced feeling of satisfaction. Teachers who believed that success

and failure were dependent largely on their behaviour tended to be self-motivated. Therefore, internals, according to Cheng's research, possessed more positive attitudes than externals; they were more highly motivated, tended to place a higher value on their professional role as teachers, and thereby would have higher expectations of what they were able to do in the classroom.

Norton (1997) examined reflective thinking in pre-service teachers as it related to LOC. A mixed-method approach was employed in this study; empirical measures of LOC were obtained using the locus of control scale for teachers of Sadowski, Taylor, Woodward, Peacher, and Martin, 1982; participants were trained in reflective practice for a semester during which they were required to do dialogue journal writing. Additionally, interviews were conducted with the participants—former pre-service teachers—to explore their reflective and creative thinking.

According to Norton (1997), a reflective teacher:

> … is one, who, at any point, can stop and look back upon either what s/he has done or what s/he had said and be really honest about the experience. I look back so my next step forward is a better one. A reflective teacher is focused, stays clear on his/her purpose, and is honest with himself/herself about the quality of the education s/he is providing. (Pat, 1992, as cited by Norton, 1997)

Norton (1997) reported that for the pre-service teachers in her sample, the TLOC was definitely a predictor of a teacher's practice of reflective thinking. He elaborated this position thus:

> Because I have an internal locus of control, I am inclined to reflect on my actions. So there's a direct relationship as far as I'm concerned there. If I'm constantly blaming other people or having other people or other things to be responsible for my actions, why in the world would I ever consider reflecting? I'd be sunbathing and reading books! Really, I can't imagine a person with an external locus of control taking time to reflect. (p. 406)

Whereas a teacher who has an external LOC believes that things happen because they just happen. You're going to think, "Well, Harry made an F because Harry made an F. I had no control over it; it was just Fate!" But the strong internal LOC looks for reasons. "Well, maybe Harry made an F because I didn't explain it thoroughly."

Sadowski (1993) noted that individuals with external LOC orientations were more likely to leave the teaching profession than those with an internal LOC orientation. The researcher also noted that greater working experience was likely to promote a more internal LOC orientation.

In 2006, researcher Time, using the adult Nowicki-Strickland internal-external control scale, reported that participants who were categorized as internal had high resiliency levels, high self-esteem, and high self–efficacy, and were more optimistic than participants who were categorized as external.

Changes in Teachers' LOC

The literature has indicated that training could modify an individual's LOC orientation from external to internal (Liu, Lavelle, & Andris, 2002; Newberry & Lindsey, 2000; Rose & Medway, 1981; Stanton, 1982).

Though literature is sparse in providing information about the utilization of training in the modification of TLOC orientation, Stanton (1982) successfully modified teachers' LOC orientation using the relaxation-suggestion-imagery (RSI) technique. This technique was applied to a group of high school teachers and teacher trainees. Stanton stated that the results "in addition to confirming the earlier findings that expenditure of one and one half hours on RSI training is sufficient to increase internality, also indicated that such modified internality may be translated into improved teachers' performance" (p. 277). Stanton's article did not indicate why RSI training technique had an impact on teachers' LOC orientation. However, one can extrapolate from the literature that any programme which involves relaxation is likely to have the results reported by Stanton, because stress and burnout have been associated with teachers who are external in their TLOC (Northington, 1998; Parkway, et al., 1988).

Liu, Lavelle, and Andris (2002) found that online instruction significantly changed graduate

students from external LOC in just one semester of training. That is, online instruction can improve an individual's perception of personal competence, responsibilities, and beliefs about his/her own learning. According to Liu, Lavelle, and Andris (2002), online instruction can be an effective means to promote change from external LOC to an internal LOC. The relationship of students' beliefs to learning is a critical dimension, especially because personal beliefs relate to online instruction.

Similarly, using a social-cognitive training programme, Manger, Eikeland, and Asbjornsen (2002) found that 14- and 15-year-old girls became significantly more internal as measured on the Nowicki-Strickland Locus of Control scale. Even younger children can have their LOC modified by training. For example, in a controlled groups experiment, Newberry and Lindsay (2000) found that "challenge course training" enhanced internality measures of children in Grades 5–8.

Many writers (e.g., Ambery, 2000; Mahan, 1996; Sjostrom, 2000) have argued that effective teacher training programmes require the identification of the characteristics of the participants. In other words, teachers and teacher educators need to understand the roles that their personal attributes play in the classroom. Ambery noted that Barbour (1994) recommended that prospective teachers learn to recognize that teacher personality affects the quality of the teacher-student interactions and, therefore, potentially has the power to determine the realization of positive relationships in the classroom. In order for the above situation to gain momentum in the education system, there is a need for the development of relevant and reliable LOC instruments that can be used to guide teacher trainers in order to better deal with these issues of professional development in teaching.

Hawkes (1991) recommended that teacher preparation programmes should include an assessment of teacher personality traits, including LOC, as a part of the admission requirements. Programmes to facilitate the modifications of LOC orientations should be included in teachers' education programmes at colleges and universities. This, Hawkes (1991) pointed out, could alleviate the need for such programmes at the in-service level in schools and districts.

Purpose of the Study

The researcher's motivation was to improve the effectiveness of teachers. This study sought to provide a tool for the development of internality training for teachers. Therefore, one aim of the study was to explore possible explanations for the effectiveness of teachers who were internal in their LOC, so that as teacher trainers we can develop and evaluate targeted internality training to improve teacher effectiveness. The following research question guided the present study:

Research question

Is there any difference between internals and externals with regard to the teachers taking responsibility for students' academic success/failure, students classroom behaviour, and teaching methods?

This principal question was expanded into the following operational research questions:

1. *What are the emergent themes of the internal oriented teacher with regards to the teachers taking responsibility for students' academic success/failure, students' classroom behaviour and teaching methods?*

2. *What are the emergent themes of the external oriented teacher with regards to the teachers taking responsibility for students' academic success /failures, students' classroom behaviour and teaching methods?*

Method

Participants and Procedure

Two hundred and twenty-five (175 females and 50 males) high school teachers in Kingston and St. Andrew in Jamaica participated in the study. This sample of teachers had an average of 9 years teaching experience. The high school teachers specialized in different subject areas such as mathematics, literature, history, Spanish, and technical drawing. Table 2 gives a profile of the participating teachers' professional qualifications. It can be observed from the table that most of the

teachers were trained teachers (75%), with the remaining 25% being pretrained teachers with bachelor's degrees only.

Table 2. Professional Qualifications of Teachers

Professional Qualifications	No. of Teachers	% of Sample
Diploma in Teaching (only)	67	32.7
Bachelor of Education (only)	51	24.9
Diploma in Teaching & Bachelor of Education	59	28.8
Teacher's certificate, Diploma in Teaching, & Bachelor of Education	4	2.0
Master of Education, Certificate of Education, & Diploma in Teaching	4	2.0
Certificate of Education & Diploma in Teaching	9	4.4
Master of Education & Bachelor of Education	4	2.0
Certificate of Education (only)	4	2.0
Missing	3	1.5
Total	205	100

Schools

This research focused on secondary schools. From the 42 schools in the combined area of Kingston and St. Andrew, 12 schools were randomly selected using a table of random numbers.

Measure

The TLC (Teachers' Locus of Control instrument) questionnaire was developed by Rose and Medway (1981) to measure the extent to which teachers held themselves responsible for students' success and failure in the classroom. This instrument was geared only for the classroom teachers and so far has been utilized only in the classroom (Cook & Bastick, 2003; Northington, 1998; Rose & Medway, 1981; Stanton, 1982). The instrument, with modifications, was used in this research to measure teachers' belief in their control over the professional environment, student achievements, and classroom behaviours and to ascertain teachers' reasons for externality or internality in their TLC orientation. Given that the TLC instrument was imported from North America, it was important to make the questionnaire culturally accessible and relevant. Modifications of the TLC instrument were first carried out in an M.Ed. project (Cook, 2001).

Based on the aforementioned modifications, the acronym for the instrument was changed to TLOC.

Procedure

The researcher individually administered copies of the questionnaire to the 225 teachers, one-on-one, over a period of five to six weeks. Each school was visited on an average of three times per week over the six-week period, with an average of four schools visited per day. The average time for each visit was approximately 2 hours, making a total of approximately 40 hours per week for data collection or between 200 and 240 hours for this phase of the fieldwork.

Permission to administer the TLOC questionnaire in the 12 schools was granted by each principal. Those teachers who agreed to respond to the part of the qualitative section of this study were required to sign an informed consent form

The targeted number for the multiple-case sample in the qualitative section of this study consisted of 24 teachers (12% of the larger sample), 12 Externals and 12 Internals. Teachers were selected from the extremity of the Internals and Externals, using the mean TLOC score and standard deviation of individual teachers. Teachers with positive mean TLOC value were categorized as Internals and those with negative TLOC score

were categorized as Externals. Of the 24 teachers, 13 teachers took part in the observation and interview section of the study.

Determining the Attributes of the TLOC Scale

Because an exploratory factor analysis aimed at ascertaining the underlying structure of the TLOC questionnaire and identifying the various sub-themes of the questionnaire failed, content analysis—a qualitative thematic approach—was used to extract the themes for the 21 questions of the TLOC questionnaire. Content analysis has been defined as a "systematic, replicable technique for compressing many words of a text into fewer content categories based on explicit rules of coding" (Stemler, 2001). This involved the categorizing of the TLOC items into themes made up of group of words with similar meanings or connotations. The rubric for categorizing questions under these themes was validated using statistical tests of inter-rater reliability. Inter-rater reliability is the extent to which two or more raters use the same categorization.

Consensus estimates of inter-rater reliability were based on the assumption that two lecturers (from the School of Education at The University of the West Indies) should be able to come to an independent agreement about how to apply the various levels of a scoring rubric to sort the items of the TLOC questionnaire into the different categories. If the two judges came to exact agreement on how to use the rating scale to slot the questions into the different categories, then the two judges might be said to share a common interpretation of the construct. There had to be independent agreement. Low Cohen's kappa indicated that the rubrics for inter-rater reliability needed to be improved. Subsequently, new judges were chosen for independent re-categorizing of the questions. It was expected that the results from the inter-rater reliability test showed the extent to which the raters agreed on the matching of each item on the TLOC scale into each theme, which was generated from the content analysis. Cohen's kappa statistics were used for calculating a consensus estimate for the inter-rater reliability. It has been suggested that kappa values from 0.41–0.60 are moderate, and that values above 0.60 are substantial (Stemler, 2004).

Coding

The themes developed from the TLOC instrument were utilized as a "start up" list of codes in Qualrus (an intelligent qualitative analysis programme).

Results

The mean for the 205 teachers completing the TLOC instrument ranged from -1760 to +1230 with a mean value of -559 (SD= 496.3) for the continuous scores. The discrete scores had a mean value -8.00 (SD= 7.592), with scores ranging from -47 to 21 (see Tables 3 and 4). Of the 205 participants, 90% are externals (184 participants) and 10% internals (21 participants) (see Table 5).

Table 3. Descriptive TLOC Continuous Scores

	N	Minimum	Maximum	Mean	Std. Deviation
CTotal	205	-1760	1230	-559.30	496.531
Valid N (listwise)	205				

Table 4. Descriptive TLOC Dichotomous Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Total	205	-21	21	-7.77	6.923
Valid N (listwise)	205				

Table 5. Categories of TLOC

Categories of TLOC	Number of Participants	Percentage
External Constant	184	90
Internal Constant	21	10
Total	205	100

Table 6 indicates the demographic profiles and the TLOC orientation of the reduced sample. The average age of the members of the reduced sample was 32 years, with an average of 6 years teaching experience. These teachers were all high school teachers, specializing in different subject areas such as mathematics, social studies, and technical drawing.

Table 6. Demographic Profile of Reduced Sample and Their TLOC Scores

Teachers' ID No	Gender	TLOC Orientation	Age	Teaching Experience	Specialized Subjects	Qualifications
6	Female	-49.75: External	23	2	Foreign Lang.	Diploma
26	Male	24: Internal	26	23	Physics/Math	Dip. in Teaching (only)
47	Female	18: Internal	54	30	Language	Dip. in Teaching
41	Female	6.5: Internal	39	18	Social Studies/Sociology	B.Sc./Dip.Ed.
162	Female	25.75: Internal	43	25	Maths	Dip.Ed./Bachelor's
73	Female	-18.75: External	41	14	Religious Studies	B.A./Dip.Ed.
90	Female	3: Internal	38	3	Business	Dip.Ed./Bachelor's
108	Female	8: Internal	24	2	Maths	Bachelor's
126	Female	-10: External	25	3	Language	Dip.Ed./Bachelor's
125	Female	-19: External	30	11	Language	Dip.Ed./B.Ed.
129	Male	-37: External		20	Resource and Tech Drawing	Cert./Diploma
113	Female	-67.5: External	46	20	Biology	Dip.Ed./B.Sc.
217	Male	-49.25: External	39	6	Welding	Diploma in Teaching

Determining Attributes of the TLOC

Exploratory factor analysis was used to explore the underlying structure of the TLOC instrument. Assessment of the factorability of the data was determined by results from Bartlett and KMO tests.

Factor Analysis

The KMO and Bartlett test (see Table 7) demonstrated that the factorability of the data was appropriate: Bartlett's test of sphericity was significant at $p<.05$ and KMO, which ranged from 0 to 1, was .723. Pallant (2001) suggested that a KMO of 0.6 is the minimum value for a good factor analysis.

Table 7. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.723
Bartlett's Test of Sphericity	Approx. Chi-Square	638.668
	df	210
	Sig.	.000

Based on the eigenvalues > 1 (1.062 –3.438), 7 factors accounted for 56% of the variation (see Tables 8 and 9). When the items on the TLOC instrument were compared with Table 10, the factor analysis procedure failed to extract common themes among the TLOC items of the questionnaire. This indicated high variability in the participants' TLOC orientation as they responded to the items on the instrument.
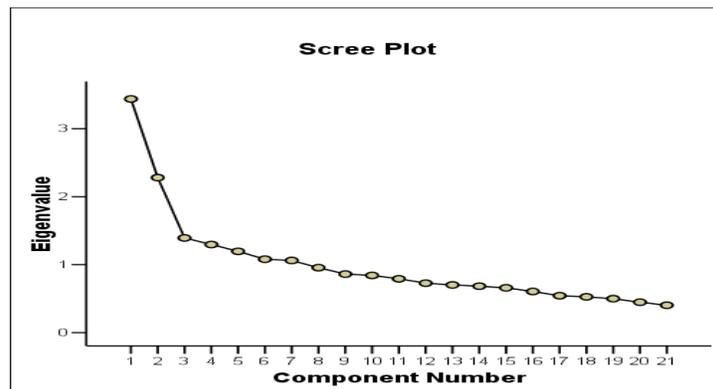

Figure 1. Scree plot.

Table 8. TLOC Variance: Results Showing Eigen Values

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.438	16.372	16.372	3.438	16.372	16.372	1.803	8.588	8.588
2	2.281	10.860	27.232	2.281	10.860	27.232	1.799	8.568	17.156
3	1.393	6.636	33.867	1.393	6.636	33.867	1.771	8.434	25.590
4	1.297	6.176	40.043	1.297	6.176	40.043	1.770	8.427	34.017
5	1.196	5.697	45.740	1.196	5.697	45.740	1.631	7.765	41.783
6	1.081	5.147	50.887	1.081	5.147	50.887	1.495	7.117	48.900
7	1.062	5.055	55.942	1.062	5.055	55.942	1.479	7.042	55.942
8	.956	4.553	60.495						
9	.862	4.104	64.598						
10	.842	4.010	68.609						
11	.792	3.773	72.381						
12	.728	3.467	75.849						
13	.702	3.342	79.190						
14	.684	3.257	82.447						
15	.659	3.139	85.586						
16	.606	2.885	88.471						
17	.543	2.588	91.059						
18	.527	2.509	93.568						
19	.500	2.380	95.948						
20	.448	2.132	98.080						
21	.403	1.920	100.000						

Extraction Method: Principal Component Analysis.

Table 9. Rotated Component Matrix: Factor 1 to 7

% of Variance	16.372	10.86	6.636	6.176	5.697	5.147	5.055
Cumulative %	16.372	27.232	33.867	40.043	45.74	50.887	55.942
Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**
QC28	**0.5920**	-0.0095	-0.0033	0.3040	0.3150	-0.0067	0.1540
QC10	**-0.5790**	0.2660	0.2010	0.0669	0.2900	0.0415	0.0637
QC16	**0.5330**	0.2830	0.3770	0.0393	0.1370	0.0778	-0.1570
QC20	**0.4900**	0.2740	0.2590	-0.1020	0.0692	0.4030	-0.0416
QC23	**0.4640**	-0.1040	0.0012	-0.2560	0.1370	0.0758	0.3190
QC14	0.0481	**0.6570**	-0.0081	-0.0499	0.1270	0.3490	0.0986
QC12	-0.0281	**0.6530**	0.2500	0.1340	0.0921	-0.2100	0.0233
QC24	-0.0758	**0.6320**	-0.1580	0.4040	-0.0218	-0.1020	-0.0196
QC27	0.0840	0.0386	**0.7260**	0.0271	0.0079	-0.0696	0.1780
QC25	0.0159	-0.0276	**0.6640**	0.0699	0.1460	0.3060	0.0584
QC30	-0.2510	0.3320	**0.3920**	0.1660	-0.1500	0.1050	0.3040
QC15	-0.3350	0.1410	**0.3770**	0.3210	0.1830	0.1090	-0.2600
QC17	0.1580	0.1460	0.0933	**0.6900**	0.0836	0.0708	-0.0062
QC22	-0.2510	0.0168	-0.1260	**0.6130**	-0.2070	0.4170	-0.0775
QC29	-0.0985	0.0923	0.2630	**0.5880**	0.1710	-0.2630	0.1620
QC18	0.0924	0.0729	0.0127	-0.0519	**0.7620**	0.0010	0.0602
QC19	0.0319	0.0977	0.1240	0.1620	**0.6300**	0.2290	0.1350
QC26	0.0226	-0.0416	0.1440	0.0236	0.2410	**0.7410**	0.0831
QC11	0.0496	0.3050	0.1040	-0.1010	0.1210	0.0369	**0.6540**
QC13	-0.0656	-0.1840	0.1510	0.1470	0.3750	-0.0046	**0.6410**
QC21	0.2670	0.0033	0.0856	0.1270	-0.1820	0.4130	**0.4660**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 41 iterations.

Table 10. Sample Results of the Factor Analysis

Factor 1	Themes
(q10) when the grades of my students improve	Students' success
(q16) Suppose I was teaching and the students had problems learning	Students' failure
(q20) If a student could not do a class assignment, it would be because	Student's failure
(q 23) Suppose students cannot remain on task for a particular assignment-it would more likely happen because	Teaching method
(q28) Suppose one day I find myself reprimanding one of my students more often than usual. This is likely to happen because	Classroom behaviour
Factor 2	
(q12) When students' grades improve on their report the probable cause is	Students' success
(q14) when some students fail a test it is because	Students' failure
(q24) If the students in my class perform better than they usually do on a test, this would happen because	Students' success
Factor 3	
(q25) If the performance of a student in my class appears to be slowly deteriorating it is usually because	Students' failure
(q27) If the students in my class performed better on a standardised achievement test, given at the end of the year, compared to the students I had last year…	Students' success
(q30) I believe I can stop my students from failing	Students' failure

The factor analysis results failed to yield common themes defined by highly intercorrelated items. The scree plot illustrates three main factors: Factors 1, 2, and 3. There are at least 11 questions loading on the three factors, contributing only 25.59% of the loading. Table 10 gives evidence of no structure and the inability to determine common themes for each of the factor. Therefore, the inter-rater reliability and the Cohen kappa statistical technique were employed to determine the attributes of the TLOC instrument. These attributes were important in establishing a profile of the TLOC.

Inter-rater Reliability

Table 11. Measure of Agreement Between Rater 1 and Rater 2

	Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Measure of Agreement Kappa	. 743	. 113	5.977	.000
N of Valid Cases	21			

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis

The items on the TLOC questionnaire were grouped into four themes using content analysis. Content analysis involved moving from one question to across-questions analysis in determining how many questions share the similar characteristics. When the same characteristic appeared in more than one question, then the group of questions were coded with specific attributes. These attributes were obtained from the literature. This division was done to extract specific attributes of teachers' perception of their roles in the classroom. The attributes were students' success, students' failure, classroom behaviour, and teaching methods. They were employed to measure the extent to which teachers believe they were responsible for certain outcomes in the classroom.

The inter-rater reliability resulted in a Cohen's kappa statistic of 0.743. There was a substantial and significant agreement between the raters at $p < 0.05$. According to Altman (1991), a Cohen kappa result greater than 0.61 is good (see Table 11).

Table 12 contains the final outcome for the groupings of the items on the TLOC questionnaire: Questions 10, 12, 15, 17, 24, 27, and 29 measured teachers' perception of their academic responsibility for students' success. Questions 14, 16, 20, 25, and 30 measured teachers' perception of their academic responsibility for students' failures. Questions 13, 18, 19, 26, and 28 measured teachers' perception of their professional responsibility for students' behaviour and classroom discipline. And, questions 11, 21, 22, and 23 measured teachers' perception of their professional responsibility for teaching methods employed.

Table 12. Categorization of the TLC Stems

	Academic Responsibility.		Professional Responsibility	
Category	Students Success	Students Failure	Behavior/Class Mgmt	Teaching Methods
Typical Referents	***Students**, Grades, Report, Test, Fail/ Improve, Pull up grades/ Better*	***Students**, Fail, Problem learning, Could not remain, Deteriorating*	***Classroom** Disruptive & Noisy, Keep your class Quiet, Trouble keeping order, Reprimanding,social climate*	***Lesson** taught did not turn out.. Discovery Methods*
Question #	1	2	4	5
Q10	*			
Q11				*
Q12	*			
Q13			*	
Q14		*		
Q15	*			
Q16		*		
Q17	*			
Q18			*	
Q19			*	
Q20		*		
Q21				*
Q22				*
Q23				*
Q24	*			
Q25		*		
Q26			*	
Q27	*			
Q28			*	
Q29	*			
Q30		*		

Levels of Coding

The open codes were the first level of coding. These codes represented attributes of the TLOC construct. These codes were used to guide the researcher in determining the predominant attributes or characteristics that defined the two groups of TLOC. The analysis was divided into three clusters of open codes. Each cluster led into an axial code. These axial codes gave reasons for internality or externality. The overarching code was the pattern code.

The open codes included the five attributes, which were obtained from the content analysis of

the TLOC instrument in Phase 1: students' success, students' failure, teacher strategy, and classroom behaviour/discipline. An additional four attributes, based on the analysis of interviews and observation were produced. Analysis was carried out in two sections: section 1 covered interviews and observations of the categories of internal teachers; and section 2 covered interviews and observations of the external teachers.
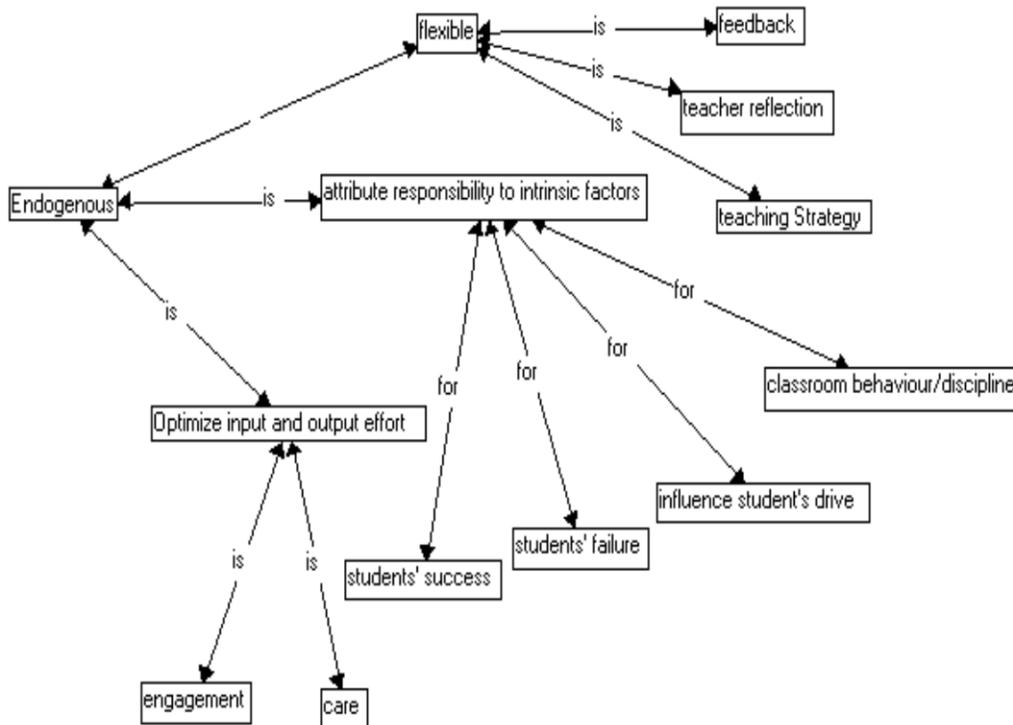

Figure 2. Endogenous levels of coding: concept map.

Endogenous/Internal Levels of Coding

There are nine open codes in this section. These open codes were clustered into three levels. The first level consisted of three open codes: feedback, teacher reflection, and teacher strategy. The second level consisted of: students' failure, students' success, and classroom behaviour and discipline. The third level consisted of engagement and care (see Figure 2 and Table 13).

What are the emergent themes of the internal oriented teacher with regards to the teachers taking responsibility for students' academic success/failures, students' classroom behaviour, and teaching methods?

The first level of coding, the open codes, included: feedback, teacher reflection, influence student's drive, care, and engagement (see Figure 2 and Table 13). These open codes were obtained exclusive to the internal teacher.

First Cluster of Open Codes

Feedback. The code feedback was defined from the teachers' perspective, that is, teachers' use of students' disposition and performance as a guide for improving the delivery of the lessons and their teaching approach. Feedback was not limited to the teachers' marking and correcting written work from students, but also involved teachers' questioning strategy during the teaching process. This was considered the direct approach. The code was expanded to involve the teachers' awareness of students' verbal and nonverbal communication during the teaching of a lesson. This was considered the indirect feedback. The internal teachers made optimum use of indirect and direct feedback. For example, participant 159 observed the students' voice intonation and nonverbal expressions to give her feedback about the students' interest and understanding during the teaching/learning process. The participant recalled:

I would say sometimes that there are children who are afraid of their own voices, but you would see interest in their facial expressions, through their eyes bulging and so on, you know when you are teaching a certain topic that child remains quiet. (internal 159)

Participant 159 continued:

…Sometimes the mood, sometimes you look on the restlessness... The time when you have your session, if it is before lunch, you have to be very careful, because sometimes they block you out. And sometimes even in the middle of a discussion, they are telling you "but Miss it is lunch time" and you know that and so you really have to look at the environmental factors – if it is too hot; you have to look at the time when you have the session - if it is near lunch time or maybe dismissal time. Again just think about lunch or time to go out, and they just block you out. So you give them just enough that will keep them, you must occupy them but do not frustrate them. (interview, 13.5.05)

Questions were asked to clear up misconceptions and to ensure that the students understood as the lesson progressed. Teachers' feedback was seen as having long-term effect, beyond the school system. This was demonstrated in the following excerpt:

Interviewer: *I'm referring to the tablecloth, you asked them (the students) what is the colour of the tablecloth in the revivalist religion? You had asked them a question what colour is the tablecloth and they said brown and then you [teacher 41] said but it's usually white. What were your purposes for asking this specific question, remember the tablecloth is there in front of them and you zeroed in and you said what is the colour of the tablecloth and they said brown and then now you said but it's usually white.*

*Teacher (**internal 41**): That was an effort to clear up misconceptions…to correct any errors that might have gone on in the presentation. That was one of them because whereas they know that they needed to have a table dressed with that sort of thing, the colour is important.*

Interviewer: *Why is it good for teachers to be that intuitive in clearing up misconceptions?*

*Teacher (**internal 41**): I think that's very important you see…we talk about creating*

impressions,— students may leave here and in the next thirty years those students could go on believing that the colour of the tablecloth is not important, so I think that it is important that you are sensitive to information that is being presented because students may bear these misconceptions for the rest of their lives. Not just about that but anything else and remember that when you ask a student to do a presentation as a teacher you are there to facilitate, you are there to guide and so you must pick out errors being made. Understand? And so, to me it's important that you pick up any of these little things. (interview 22.03.05)

Internals seemed to give feedback to students not only about the content of their academic work but also to influence and build students' self perception (internal 26).

Question: *Why is immediate feedback so important?*

Teacher (internal 26): *That class have a serious problem with self confidence, motivation; they seem to have a low self-esteem even towards the subject. So what we try to do by giving them that immediate feedback is to communicate the feeling that they are doing something, that they are learning. It keeps them doing more in the class. It keeps them going. By giving that immediate feedback it helps to build their self esteem and they feel that they are in fact learning.*

Question: *Why is that important?* [building the students' self esteem]

Teacher (internal 26): *If they don't have any self-esteem they are already half defeated. They have to have a certain level of belief in themselves. I find that's a large part of it. If they don't believe in themselves and don't believe that they can do it, they will just become detached and lethargic and you won't get the best out of them. So, in order to get the best out of them they need to believe that they can do it. And they will work harder.* (interview, 7.03.05)

The externals gave feedback for different reasons. They seemed to give feedback to communicate to the students the extent to which they, the students, understood the content. The following excerpt demonstrates this:

Interviewer: *You ask the students to come up individually while they were doing the work, what were some of your reasons for letting them come up?*

Teacher: *Okay. When I finish marking I see where they haven't answered some of the questions correctly, so based on calling them up it was just like to point out to them where in the passage, where the context says ... the right questions and answers so that's basically to put them on the right track.*
...Basically the knowledge of the whole subject area you know because it's a wide area and the book has a lot of knowledge inside....a lot of knowledge inside of that book you see them working from so basically when they complete that book they will be fully rounded. (external 217, interview,14.03.05)

The code "feedback" was used nine times during coding; of the nine times only twice was this open code applied to externals.

Teacher reflection. Teacher reflection, in this context, referred to retrospective thinking. It underscored a relationship between the reflective process and what the teacher did subsequent to reflection. The teachers reflected upon their experiences in order to get a new understanding of how they taught previously, how the students responded to their previous teaching, and how to modify future teaching approaches in order to maximize students' learning and interest. This code was used at least six times, but only once was the code assigned to a teacher who was externally oriented in their TLOC.

Internal teachers 26 and 41 noted the following:

Because normally from year to year I try to put more effort into teaching my subject I don't really teach the same way every year. That's the major part of it and another part of it is also progressively. (internal 26, interview, 03.05)

I think that with experience you are able to improve your delivery and perhaps when you are able to assess what happened the previous year,

you may be able to improve on that, largely, so you may do a better job teaching it a second time around. (internal 41, interview, 22.03.05)

Teaching strategy. Teaching strategy was defined as planning and directing activities in the classroom. This could also include teaching methods, which were special forms of procedures or approach to teaching. Of the 74 times "teaching strategy" was used as a code, it was applied approximately 38 times to teachers with internal LOC. Teachers who were internal in their TLOC orientation were flexible in their teaching strategy and took responsibility for the possibility of using an inappropriate teaching approach. Participants 162 and 108 accepted the notion that teachers' teaching approach can create a barrier to students' interest and learning of the content.

Participant 162 explained:

Because when they don't understand, it probably means that the method I am employing is not working so I have to try another method, I have to try to find ways to motivate them to let them see that I am interested in them and I want them to learn so I have to find different ways and means to get their attention. (internal 162, 27.04.05)

Participant 108:

… so I think if generally the class does better I would think it's just the way that I am approaching it. Or, it may be that how I am introducing it is more clear or more interesting or more suited to that group. (internal 108, interview, 05.05)

Flexible (Axial code). Subsequent to the above, an important explanation of teachers' internality was their flexibility in their delivery of the lesson. These teachers were able to change or to adapt to the different demands in the teaching/learning process because of the following attributes: internal teachers were observant of their students as they taught their classes; they used both direct and indirect feedback to inform their teaching approach; and the internals were reflective practitioners. This code was used at least 54 times, but was applied 6 times to external statements.

Second Cluster of Open Codes

The second cluster of open codes/attributes was: classroom behaviour/discipline, influence students' drive, students' success, and students' failure. Three of these codes were derived from the content analysis of the TLOC instrument. They were used as "start up" for the analysis of the observations and interviews in Qualrus. These open codes gave an understanding of the learning outcomes that the internal teachers held themselves responsible for.

Classroom behaviour/discipline. Classroom behaviour/discipline was defined as teachers perceiving that they were responsible for the creation of a comfortable and productive learning environment. To achieve this, they took responsibility for behavioural problems and other disruption that occurred during the teaching of a session. Internal teachers were of the opinion that if students were occupied with meaningful work when the teacher leaves the classroom for five minutes or more, then students in the class would not be as disruptive and noisy.

When internals were asked: "If the students in the class became disruptive and noisy when I left them alone in the room for five minutes, this would be because (a) I didn't leave them interesting work to do while I was gone, (b) the students are more noisy that day than they usually are, or (c) other." They responded "(a)." The internals were of the opinion that when students were occupied they were less likely to be disruptive. Participant 26 remarked:

Because normally you find that if the students are occupied, productive they wouldn't become disruptive and noisy … if they have work, if they are occupied, then they wouldn't become disruptive. They become disruptive when they have nothing to do. (internal 26, 04.05)

Internals seemed to believe that teachers were responsible for communicating to the students their standards and expectations of the class. Participant 162 explained:

My students know that when I set them to task, they have to be working at that task so if I go and find them noisy its not that they are not at task, but it is just as I said, they are probably working

together or disagreeing on an answer and trying to argue it out. That's basically it... because they know my expectation, what I expect from them, I expect that if I give them something to do, they know that they have to do it because they are accountable and when I come to ask for the work and the work is not done or they have not completed a certain percentage of the work within that space of time, they know that they are going to be serious trouble so they know that they have to comply. (3.05.05)

Internal teachers also recognized that if the teacher left work that was above or below the students' academic understanding then misbehaviour and disruption would ensue. Participant 159 commented that:

...to some extent, I would say that if the work is not interesting, if it is not challenging when I am gone, definitely, they would find time to make noise and to be disruptive. But then there are cases/times when you do leave them the challenging work and sometimes when the work is too challenging they become frustrated too and resort to disruptive behaviour. So I won't say it is solely because the work is not interesting. Yes there are times, when there is the odd day when sometimes you want to know, as my principal would say, the devil pass through, yes there are odd days, that is minimal. But I think that there are other factors that impinge on disruptive behaviour. (interview, 05.03)

Based on the above accounts, it seems clear that these teachers did not believe that disruptive behaviour in the classroom was beyond their control. Rather, they perceived themselves as responsible for communicating their expectations, and for giving students' work that was challenging and stimulating. This code was used at least 29 times, but was applied 11 times to external statements.

Influence students' drive. Although students' motivational histories accompany them in the classroom, it is very important for teachers to view themselves as having a significant motivational influence on students' learning. According to Stipek (2002), "the teacher who continues to expect each and every student in a class to learn

will invariably be more successful in achieving that goal" (p. 227).

The code "influence students' drive" describes teachers' perception of their role in influencing students' motivation or desire to succeed in the teaching/learning process. The internal teachers believe that they have a role in the process of students' motivation, but they also recognize that there are students who are self-motivated and those who are not. For the internal teacher, influencing students' motivation is not only about the actual teaching of their subject area, but also involves the comfortableness of the learning environment and the relationship between the teacher and the students. Participants 90 and 162 describe their perception of these, respectively:

Well most time the teachers motivate the student you know, most times. The one student who doesn't ... the isolated few is already gifted so they have the innate ability to do well most times....(internal 90, 05.05)

...so it could be that the relationship with the students is better this year, the rapport we share, or they are more comfortable, I've perhaps found a way to make them feel more comfortable in life because students, especially girls, tend to want to shy away from life and they tell themselves that they can't do it and they won't pass but if you are able to let them feel comfortable, let them know that hey this subject is for everybody, see, I'm a female, I'm a maths person, so its not a matter of putting more effort into teaching policy but a matter of making them more aware, more comfortable and encouraging them. But I suppose all of that comes into teaching. (internal 162, 05.05)

This code was applied at least 16 times only to internal statements.

Students' success and failure. Students' success and students' failures are codes that represent the outcomes of the learning process. The TLOC scale measured the extent to which teachers took responsibility for students' success and failure. The data indicated that internal teachers took responsibility both for students' failures and students' success. Participant 26 reinforced this belief:

...before I said that I would have to take responsibility if they didn't perform well, so if they perform well then I would have to say "Yes I did a good job of teaching that subject that area." (internal 26, 04.06)

Participant 159 related her experience with two students who were struggling in their academic work throughout the school term and spoke about their ultimate success in the standardized examination at the secondary level, the Caribbean Examinations Council (CXC) examinations. This teacher, with a strong sense of commitment and high teacher efficacy, scaffolded these struggling students to success. Participant 159 recalled:

Yes, because I know one, another one, the two of them were in the same class. Well this one passed sometimes, but very weak, expression poor and just putting the things together was difficult, I mean organising his work and he went to CXC, but I must confess too that I pray for my students a lot, I pray for them and when my children are doing exams, I go and fast by just praying for them and put it before the Lord and this one, the only two subjects he passed were the two subjects that I taught him. (internal 159.05.03)

The second level of axial code/theme, "attribute responsibility to intrinsic factors," integrates the following open codes/attributes: classroom behaviour/discipline, influence students' drive, students' success, and students' failure. Therefore, the aforementioned open codes can be seen as the structure of "attribute responsibility to intrinsic factors." The internal teachers believed that they had control over learning and behavioural outcomes in the classroom. This control was strengthened by the teachers' high sense of teacher efficacy. This code was used at least 65 times, but was applied 14 times to external statements.

Third Cluster of Open Codes

This final cluster of open codes for the internal/endogenous group was "care" and "engagement." These two open codes speak explicitly to the affective domain of the teaching/learning process.

Care. Caring teachers seek to connect with their students through their holistic approach to the teaching/learning process. They believe that all students can learn and they communicate this to their students (Noddings, 1992). It involves engrossment on the part of the teacher in his/her professional responsibility towards his/her students.

The internals did not see only class of students but individuals within the class with their own unique skills, personalities, and needs. This was revealed in the following statement by participant 90:

... No I do not relate to the class as a group, no class that I teach I relate to as a group. I try to see them on an individual basis. As I tell them, I see them first as students and then as my kids, perhaps, and then at the end point deal with them as a group. The reason I do this is that as they say students learn at different rates and if I teach them as a group then there might be a child who is struggling that I may overlook or one that may be lost in the system so I deal with them on an individual basis so that I can attack the individual needs of the students. (internal 90, interview, 9.05.05)

Participant 41 reiterated this:

I'm playing a dual role. I'm a student too...that's my thing, I'm always a student. I'm a teacher but I am sitting in that seat as a student. I can relate to my experience and I know what works for me. I know that it may not work for everyone. I know that it's important that students are guided and that they create some sort of structure and I know that that helped me so it is important to me that they do well and I know sometimes they do not know even at that stage what is best for them...and I think that over a time they have come to trust me and trust my judgment and so there is very little resistance despite the fact I encourage them to have different views. (internal 41, interview, 22.03.05)

This code was used at least 11 times, and was applied 9 times to external statements.

Engagement. Engagement is used as an open code to describe teachers' belief that they can influence students' academic interest. Internal teachers recognize that it is important for students to be involved and participating in the

teaching/learning process. Internals used different strategies to accomplish the above. For internal 26, he used questioning to pull out from the students the answers to their own questions. He explains:

What I try to do I continually ask questions right, because I am trying to get them to think. So instead of just telling them straight I try to pull it out of them by asking them questions and then giving them pieces of information to try to get them involve and to get them thinking. Because I find that especially these, sometimes their attention might waver, so by doing it that way I try to hold their attention more because they have now be on the alert because if you notice that at the beginning of the class I had to more supplying questions but towards the end of the class they were now better able to respond. (internal 26, interview, 24.02.05)

Participant 162 tried to create a non-threatening classroom environment where students are relaxed and feel unrestricted in inquiring of the teacher. As Caine and Caine (1997) pointed out, complex learning is enhanced by challenge and hindered by threat. Participant 162 described the classroom climate she sought to maintain in her class:

Well I think students learn better when they themselves are more relaxed...when they're under pressure they tend to be tensed and sometimes they don't grasp concepts that readily but in a relaxed atmosphere where they can approach the teacher at any time or share with their peers without feeling restricted then I feel that sharing in terms of helping each other can help them to learn ...they grasp some concepts quickly also from their peers as opposed to the teacher as well. (internal 162, 11.04.05)

This code was applied at least 15 times only to internal statements.

Exogenous/External Levels of Coding

There are eight open codes in this section. These open codes are clustered into three levels. The first level consists of two open codes: "Fixed perception of students" and "teacher strategy." The second level consists of: students' failure, students' success, and classroom behaviour and discipline. The third level consists of student

effort, home environment, and care (see Figure 3 and Table 14).

What are the emergent themes of the external oriented teacher with regards to the teachers taking responsibility for students' academic success/failures, students classroom behaviour, and teaching methods?

First Cluster of Open Codes

Fixed in perception of students. The code "fixed perception of students" is used to describe teachers who had fixed disposition towards their students. These teachers tended to have a predetermined and inflexible perception of their students. They used these fixed perceptions or dispositions to generalize. The code was used 11 times in the coding process: 10 times for externals and 1 time for an internal. External 125 explained:

They are slow or they are at times lazy,... It is very difficult for me to really prevent a child from failing because even when I go and do additional things to help the child from failing, can only bring them to a certain level and no more, they would still need to go beyond that level to achieve a certain standard. So that is what I think. (external 125, interview 11.05.04.)

The external teachers' fixed perception caused them to view students as empty vessels waiting to be filled rather than recognizing the students' unique strengths and weaknesses. All students were viewed as lacking self-motivation. External 113 explained:

At National High School (pseudo-name) over the years we have been used to getting students who we have to help every step of the way. We rarely have self-motivated students so you recognise the fact.... (external 113, interview, 09.03.05)

Table 13. Levels of Coding: Endogenous/Internal TLOC

| PATTERN CODES	AXIAL CODES/THEMES	FREQUENCY OF SELECTED OPEN CODES/ATTRIBUTES	EXEMPLARY STATEMENTS/BEHAVIOURS
Endogenous/Internals 55 times. Teacher takes responsibility for the outcomes of the teaching-learning process. Endogenous attributes: flexible, takes responsibility, and teacher effort. Value: Respect for others.	FLEXIBLE 48 times. Able to change or to adapt to the different circumstances in the teaching-learning process. Use feedback from class to inform classroom teaching.	FEEDBACK 9 times. Teacher uses students' disposition and performance as a basis for improving the delivery of the lesson. Feedback informs teaching approach.	"…I would say sometimes that there are children who are afraid of their own voices, but you would see interest in their facial expressions, through their eyes bulging and so on, you know, when you are teaching a certain topic that children are quiet." (Internal 159)
		TEACHER REFLECTION 5 times. Looking back over the previous year. Open to improving approach each year.	"…Because normally from year to year I try to put more effort into teaching my subject. I don't really teach the same way every year. That's the major part of it and another part of it is also progressively…" (Internal 26)
		TEACHER'S STRATEGY 28 times. Planning and directing activities in the classroom. This could also include teaching methods, which are special forms of procedure or approach to teaching.	"…Because when they don't understand, it probably means that the method I am employing is not working so I have to try another method. I have to try to find ways to motivate them to let them see that I am interested in them and I want them to learn so I have to find different ways and means to get their attention." (Internal 162)
	ATTRIBUTE RESPONSIBILITY TO INTRINSIC FACTORS 54 time. The teacher sees him/herself as having control over learning and behavioural outcomes in the classroom. Therefore, the teacher takes responsibility for students' success or failure and classroom management.	CLASSROOM behaviour/Discipline 18 times. The teacher takes responsibility for creating a comfortable and productive learning environment, and to minimize behaviour problems and other disruptions.	"…because they know my expectation, what I expect from them. I expect that if I give them something to do, they know what they have to do it because they are accountable and when I come to ask for the work and the work is not done or they have not completed a certain percentage of the work within that space of time, they know what they are going to be serious trouble so they know that they have to comply." (Internal 162)
		INFLUENCE STUDENTS' DRIVE 16 times. To influence student's motivation or desire to succeed in the teaching-learning process.	"Yeah because it is the teacher who usually has to motivate them in order for them to try harder." (Internal 26)
		STUDENT'S SUCCESS 41 times. Students improving in their academics; students passing a test. Takes responsibility or attribute student's success. This code appears in the project.	"…remember before I said that I would have to take responsibility if they didn't perform well, so if they perform well then I would have to say "Yes I did a good job of teaching that subject that one." (Internal 26)
		STUDENT'S FAILURE 7 times. Student fails a test, students have problem learning a concept and student cannot learn on task.	"…if the students fail it is the teacher's fault, my responsibility is for them to pass. So even if they don't learn as much as I would want them to learn or don't assimilate take the attitude that I have been trying to … because I try to teach them more than just the lesson so even if that portfolio, there at least they should be able to … pass the exam so that it is the least requirement so I should be able to … naturally it might happen that it is not all cases you are able to be successful but I think that is my responsibility, you have to take responsibility for that." (Internal 26)
	OPTIMIZE INPUT AND OUTPUT EFFORT 40 times. The teacher accepts that learning outcomes are dependent on their effort and input.	CARE 11 times. The teacher motivates students' achievements by creating a caring classroom environment. Going beyond the call of duty. Having a holistic approach towards teaching	"…When students understand that you are interested in their well-being, you're interested in each person as an individual… when that student feels better and comes back to class that student does every effort to get whatever they missed down and to come and seem me and to find out if anything else was given."(Internal 41)
		ENGAGEMENT 15 times. The teacher perceives that he/she has control over students' interest.	"I think … at all times I am very aware of what's happening with each student in my class. _____ The way the student looks at me, if the student has to put her head down and I know she say it's because her tummy hurting she want to stay in the class. I know … but I am at all times in contact with my students. I know for example if I am teaching a lesson and I am not reaching them and I may have to stop and find out what is happening, where their minds are at, if they are not interested or what and to me is very, very important…." (Internal 41) "…That would have to be my responsibility, if the task wasn't within the grasp of the student. Because maybe the task was too long or too difficult."(Internal 26).

Figure 3. Exogenous: Levels of coding.

Teaching strategy. Teaching strategy was defined as planning and directing activities in the classroom. This could also include teaching methods, which were special forms of procedures or approach to teaching. When teachers observed students' lack of enthusiasm for the lesson topic, they sometimes blamed it on an imbalanced focus by students, which created its own barrier to learning. These teachers lack the capacity to acknowledge their role in gaining students' interest during the teaching/learning process. This was exemplified by external 217 statement:

Because sometimes the student may be sitting in class because they have to be there but they are not really particular or care either way to do the subject, but sometimes when you hit upon a topic that they are familiar with or it's close to their heart, you strike a chord and they become very interested. (external 217, interview, 05.05)

This lack of willingness to adjust teaching strategy to accommodate students learning was further reiterated by external 6 when she stated that:

Whenever a student performs better than he or she normally does, I don't really take credit for that student improving because I don't think it is anything that I did....I don't think I have done anything different...I don't think I have changed any methods....That's it, I just don't think I have changed, I think I am more constant than the students themselves and if they have done...well if it is not something I have done, I cant see it. I really can't see it. (external 6, interview, 04.03)

These external teachers seemed to prefer life in the classroom to be predictable and familiar. The axial code of inflexibility may indicate that the external teachers may be experiencing serious mental barriers to change because of their

preference for structure and routine activities in the classroom experience. This code was used at least 74 times, and 36 times to external statements.

Second Cluster of Open Codes

The second cluster of open codes for teachers with external TLOC, or exogenous attributes, is: student failure, student success, and classroom behaviour/discipline. These three open codes were applied also to statements by internals. The internals took responsibility for the classroom outcomes represented by this cluster of open codes. However, the externals, because of their inflexibility, attributed success, failure, and students' behaviour to extrinsic factors, that is, factors outside the teachers' control.

Student failure. The open code "student failure" referred to teachers taking responsibility for students failing a test, students having problems learning a concept, or students not able to remain on task. Externals tended to believe that they could not stop students from failing. Participant 6 echoed this when she stated:

…only they can stop themselves from failing. It is for them to prepare, right, so if you don't prepare that means you plan to fail so I am the teacher, I can only see them in the class time, when they go home that is their thing, I can't do any more for them when they go home, I can't learn any more for them, so its up to them. (external 6, interview, 03.05)

Participant 113 concurred with participant 6 when she said the following:

I know I cannot stop them from failing I disagree….Because in the final analysis after the teacher has done their best, the rest is up to the students. (external 113, interview, 09.03.05)

Teachers who believe that they cannot stop their children from failing will not have the capacity or the attitude to work with struggling students. This code was used at least 12 times, and was applied 5 times to external statements.

Students' success. "Students' success" referred to teachers taking responsibility for students' improvement in their academics: students passing a test or doing well on an assignment. The external

teachers' efficacy was not high enough to see students' success as a direct result of their input. For example:

I try every day, every class to encourage the students to do better so if they have not been performing and then suddenly they start to do much better then it has to be some other factor that is causing them to want to try harder. (external 113, interview, 09.03.05)

There are externals who do take a certain amount of responsibility for students' success. This is based on their low expectation of students. If the students do well, which they rarely do, then it must be as a result of the teachers' input. Participant 125 voiced this:

The students study a lot for the test!! (laugh, laugh). My students don't study at all for if they got a good grade it would mean that they really studied.…It could mean too.…I do a good job all the time, and they don't do well, so if they really did well, it would mean that they put in the extra effort. (external 125, interview, 11.05.04)

This code was used at least 73 times, and was applied 32 times to external statements.

Classroom behaviour/discipline. "Classroom behaviour/discipline" referred to the teacher taking responsibility for creating a comfortable and productive learning environment, thereby minimizing behavioural problems and other disruptive actions. Externals tended to take little responsibility for students' behaviour. They did not see themselves as directly responsible for planning, managing, and developing acceptable classroom discipline among students. External 73 believed that if students really decide to behave badly there is nothing that can be done:

There are days when students are more noisy like the class I had today, they're not normally like that…but making noise I think is just students' way. They will do it…it is really up to them I think, nobody can really force them to behave. You can encourage them but if they really decide not to, the reality is that there is hardly anything you can do about it. (external 73, interview, 10.05.04)

Participant 113, while not taking responsibility for students' behaviour in the classroom, proceeded to stereotype students who were struggling academically:

It's funny you should ask that! If the class on a whole behaves noisy when I leave them I'm inclined to believe that it has to do with performance ability of the students in the class. Generally, if you have a group of students who are not too interested in academic work and they are, call it academically challenged, they are inclined to indulge in disruptive behaviour and other playful activities if the teacher steps out of the classroom. (external 113, interview, 4.05.05)

The above-mentioned open codes integrated into the theme/axial code, "attribute responsibility to extrinsic factors." This somewhat confirmed that the teacher with an external TLOC views learning outcomes in the classroom as out of his or her control. This code was used at least 29 times, and was applied 11 times to external statements.

Third Cluster of Open Codes

This third cluster of open codes was comprised of: student effort, home environment, and care. This cluster gives some of the extrinsic factors that external teachers believe were responsible for the learning and behavioural outcomes in the classroom.

Students' effort. The open code "students' effort" referred to teachers' belief that students' effort has a major influence on the learning outcomes. If students cannot remain on task, it is the students' lack of focus or concentration. The external teacher seemed to believe that students come to the classroom with inherent qualities that will determine success or failure. These inherent qualities outweigh the teachers' influence on learning outcomes in the classroom. Exemplary statements of this belief came from interviews with externals 6 and 126, respectively:

:...when a student cant stay on task, its maybe because she's not focusing and I put that at 80%, she's not focusing on the work she has to do and my tasks, as I said before, are designed for students to pass, they're easy ...so my thing is set up for them to pass. (external 6, interview, 03.05)

The students are distracted for whatever the reason may be. They do not spend much time on their assignments and they have a tendency to find other things to do. Once they lack concentration it is very difficult for them to complete whatever task is given. *(external 126, interview, 27.04.05)*

This code was used at least 32 times only to external statements.

Home environment. The "home environment" indicates teachers' belief that parental support is a major contributor to successful learning outcomes. Participant 113 had this to say:

When the grades of my student improve, I am inclined to believe it's the home because I always use stimulating activities. (external, 113, interview, 4.03.05)

Participant 6's statement encapsulates the external teachers' belief about students' performance and the home's role:

When I teach, I go through...I pull out all the stops, I make sure that the students are understanding during, even though I say to them that I am not a fire breathing dragon and they can ask me questions, but sometimes, most times, they don't ask questions and then they complain saying that they don't understand so I make sure that they understand I do all sorts of things to make them understand. So when I am teaching a topic and the students they don't produce, I am deducing that it must have been that they weren't interested and I was saying that also that they are not stimulated coming from home I was saying that they weren't stimulated coming from home it's just that they just come to school and they sit down in class and what is going on in school is not really interesting to them. They just come to school many of them to socialise not to do work. (External 6, interview, 4.03.05)

This code was used at least seven times only to external statements.

Care. The external teacher, similar to the internal teacher, cared about their students but this care was expressed in different ways by the two categories of teachers:

If they are having problems then they are supposed to find the teacher, the teacher will arbitrate and help them to straighten it out but they remain as a group. *(external 113, interview, 20.04.05)*

...I have good rapport with them [referring to parents]...sometimes I threaten them in terms of I know where you live, I know your mother...I keep good relationship with the parent ..in terms of good relationship I call them regularly to give them feedback you know and the behaviour pattern and all that so I guess that may make a difference... they know I'll call their parents and tell them exactly what they are doing and they don't really want that. (external, 217, interview, 14.03.05)

This code was used at least 20 times, and applied 9 times to external statements.

Results for Pattern Codes: Endogenous and Exogenous

Endogenous and exogenous were used as pattern codes for external and internal TLOC during the coding process. These codes allowed the coding process to be carried out blindly, in order to enhance the validity of the process. Tables 15 and 16 show the frequency with which each of the codes was used during coding. The endogenous and exogenous are pattern codes, which represent the internal and external attributes, respectively. Hypothesis 7 guided the analysis in this section:

H0 7: There is no difference in the LOC attributes of internal and external teachers.

Hypothesis 7 was rejected. The chi-square test showed a significant difference between the frequency with which endogenous codes were used versus exogenous codes. It can be observed from Tables 15, 16, and 17 that endogenous codes, though associated with internal and external statements, were more dominant with internal statements. Whereas exogenous codes, though associated with internal statements, were more dominant with external statements.

Discussion of Findings

Specific LOC for Teachers: TLOC

The findings indicated the demarcating attributes of the internal and external teachers' intentions. Such attributes reflected the teachers' ability to be discriminative of the context, that is, flexibility versus inflexibility, and to be more guided by their own identity versus the teaching methods and the powerful others.

<u>Research question</u>

Is there any difference between internals and externals with regards to the teachers taking responsibility for students' academic success/ failure, students' classroom behaviour, and teaching methods?

As the internals took responsibility for students' academic success/failure, students' classroom behaviours, and teaching methods, they aimed at using feedback appropriately, teacher reflection, and taking responsibility for influencing students' drive, care, and engagement. These attributes were grouped into the following themes: flexibility, attributes responsibility to intrinsic factors, and optimization of input and output efforts. The externals did not take responsibility for students' academic success and failure, and classroom management. Although the external teachers took responsibility for teaching methods, they had fixed perceptions of their students, and attributed failure or success of their students to the students' home environment and students' efforts. These attributes were grouped into the following themes: inflexibility, attributes responsibility to extrinsic factors, and optimized input efforts.

Distinction Between Specific LOC Attributes of Internals and Externals

The internal teachers' flexibility in their teaching approach was derived from the teachers' intent to use feedback from students to inform their teaching practice, and to enact change in the teaching/learning process. The internal teachers, according to the results of this study, were prepared to adjust their approach to accommodate the gaps in students' learning.

Table 14. Levels of Coding: Exogenous/External TLOC

PATTERN CODES	AXIAL CODES/THEMES	OPEN CODES/Attributes of TLOC	EXEMPLARY SEGMENT/behaviour
EXOGENOUS/ EXTERNAL 44 times. THE TEACHER TAKES NO RESPONSIBILITY FOR THE OUTCOMES OF THE TEACHING-LEARNING PROCESS. HE/SHE PERCEIVE THAT LEARNING OUTCOMES ARE ACCOUNTED FOR BY EXTERNAL VARIABLES.	INFLEXIBLE 26 times. "...not willing to adapt, not open to change"	FIXED PERCEPTION OF STUDENTS 10 times. The teacher's disposition towards the students are predetermined and inflexible.	"... It is one of the challenges that I face here with the student coming from a background where they are not encouraged to read, where you find that maybe it is only 60% of the class that can read over a certain level. It is very difficult for me to really prevent a child from failing because even when I go and do additional things to help the child from failing, I can only bring them to a certain level and no more, they would still not to go beyond that level to achieve a certain standard. So that is what I think (External 125)
		TEACHER STRATEGY 36 times. Planning and directing activities in the classroom. This could also include teaching methods which are special forms of procedures or approaches to teaching.	Because sometimes the student maybe sitting in class because they have to be there but they are not really particular or care either way to do the subject; but sometimes when you hit upon a topic that they are familiar with or it's close to their heart, you strike a chord and they become very interested (External 217).
	Attribute responsibility to extrinsic factors 32 times.	STUDENT'S FAILURE 5 times. This refers to student(s) failing a test, students have problems learning a concept and student cannot remain on task.	"Yes I disagree because only they can stop themselves from failing. It is for them to prepare, right, so if you don't prepare that means you plan to fail so I am the teacher, I can only see them in the class time, when they go home that is their thing, I can't do anymore for them when they go home, I can't learn anymore for them, so its up to them". (External 6).
	Teacher does not take responsibility for learning outcomes.	CLASSROOM BEHAVIOUR/discipline 11 times. Teacher takes no responsibility for creating a comfortable and productive learning environment, nor to minimize behaviour problems and other disruptions.	"It's funny you should ask that! If the class on a whole behaves noisy when I leave them I'm inclined to believe that it has to do with performance ability of the students in the class, generally if you have a group of students who are not too interested in academic work and they are, call it academically challenged, they are inclined to indulge in disruptive behaviour and other playful activities if the teacher steps out of the classroom" (External 113).
		STUDENT'S SUCCESS: 32 times. Students improving in their academics; students passing a test or doing well on a project	"When the grades of my student improve, I am inclined to believe it's the home because I always use stimulating activities…" (External 113).
	OPTIMIZED INPUT EFFORTS 20 time(s). The teacher believes that he/she is using all the strategies which are actually possible and which can best achieve their teaching goals.	STUDENT EFFORT 32 times. Teachers perceive that students' effort has a major influence on learning outcomes.	"…. when a student cant stay on task, its maybe because she's not focusing and I put that at 80%, she's not focusing on the work she has to do and my tasks, as I said before, are designed for students to pass, they're easy …so my thing is set up for them to pass (external 6 interview, 03.05)"
		HOME ENVIRONMENT 7 times. Home environment refers to good quality parental involvement in students' academic achievement.	"When the grades of my student improve, I am inclined to believe it's the home because I always use stimulating activities…"(External 113).
Values: Respect from others		Care 9 times. Going beyond the call of duty; having a holistic approach to teaching.	"If they are having problems then they are supposed to find the teacher, the teacher will arbitrate and help them to straiten it out but they remain as a group (external, 113; interview, 20.04.05)".

Table 15. Frequency of Endogenous and Exogenous Codes

		QUAL		Total
		1 Internal	2 External	
QUANT	1 Endogeneous	55	16	71
	2 Exogeneous	21	44	65
Total		76	60	136

Table 16. Percentage Distribution of Endogenous and Exogenous Codes

			QUAL		Total
			1 Internal	2 External	
QUANT	1 Endogeneous	Count	55	16	71
		% within QUANT	77.5%	22.5%	100.0%
		% within QUAL	72.4%	26.7%	52.2%
		% of Total	40.4%	11.8%	52.2%
	2 Exogeneous	Count	21	44	65
		% within QUANT	32.3%	67.7%	100.0%
		% within QUAL	27.6%	73.3%	47.8%
		% of Total	15.4%	32.4%	47.8%
Total		Count	76	60	136
		% within QUANT	55.9%	44.1%	100.0%
		% within QUAL	100.0%	100.0%	100.0%
		% of Total	55.9%	44.1%	100.0%

Table 17. Chi-square Results for Exogenous and Endogenous Codes

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	28.067(b)	1	.000		
Continuity Correction(a)	26.265	1	.000		
Likelihood Ratio	29.087	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	27.861	1	.000		
N of Valid Cases	136				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 28.68.

Teacher (Internal 41) stated that:

That was an effort to clear up misconceptions...to correct any errors that might have gone on in the presentation. ... When you ask a student to do a presentation as a teacher you are there to facilitate, you are there to guide and so you must pick out errors being made. Understand? And so, to me it's important that you pick up any of these little things. (internal 41, interview, 22.03.05)

On the other hand, the external teachers displayed inflexibility in the teaching practices adopted. The externals' inflexibility resulted from their belief that they had optimized their input effort by lesson planning and preparations, delivery of content, and assessment of students' work. For example, external participant 125 voiced:

The students study a lot for the test!! (Laugh, laugh). My students don't study at all for if they got a good grade it would mean that they really studied... I do a good job all the time, and they don't do well, so if they really did well, it would mean that they put in the extra effort. (external 125, interview, 11.05.04)

Therefore, externals felt that the main influences on students' learning outcome were exogenous factors. These exogenous factors included the students' home environment and input efforts of students (see Table 14). For the external teachers, there were ceiling effects on their efforts and they seemed to perceive themselves as having done all they could.

The results indicated that the tendency of external teachers to attribute students' success or failures to exogenous factors was by way of excuse—it absolved them from feeling responsible. This disposition in external teachers concurs with the findings of Basgall and Snyder (1988), which revealed that externals were more prone to engage in excuse making than internals, as excuses are viewed as protective strategies

It was demonstrated in the data analyses that external teachers did not take responsibility for either their students' failure or for their success. Woolfolk and Hoy (1990) explained that teachers who perceived that outside factors made dominant contributions to the outcomes in the classroom

would attribute even positive classroom scenarios to external factors.

Internal teachers did not really perceive themselves as having achieved optimum efforts; therefore, they were more flexible in their teaching practices in the classroom. Internals sought to maximize output efforts by virtue of their belief that they were capable of influencing students' learning outcomes.

The Use of Feedback to Inform Teaching Practices

The internal teachers made optimum use of indirect and direct feedback. For example, Participant 159 observed the students' voice intonation and nonverbal expressions to give her feedback about the students' interest and understanding during the teaching/learning process. The participant recalled:

I would say sometimes that there are children who are afraid of their own voices, but you would see interest in their facial expressions, through their eyes bulging and so on, you know when you are teaching a certain topic that child remains quiet. (internal 159)

While there was no evidence that the externals used feedback to inform their teaching practice, there was evidence that internals did. Feedback allows teachers to discover how to reach students and get them to attend to incoming information; how to structure review processes so students retain information beyond the test; and how to align instruction, reviews, and assessment to help students to retrieve information more efficiently and effectively (Sprenger, 2005).

Reflective Practices: Internals Versus Externals

The internal teachers reflected on their strengths and weaknesses with the intent of doing things differently from year to year. Participant 26 pointed out that his reflection caused him to do things differently from year to year with the same subject, the same time schedule, the same grade level, and different students (Internal 26, Interview, March, 2005). Teacher self-reflection included how to improve delivery and assessment

in the teaching process (Internal 41, Interview, 22 March, 2002).

Self-reflection, as a practice of internal teachers confirmed the findings of Norton (1997), who concluded that reflective thinking was a predictor of teachers' TLOC orientation. A teacher who is reflective should be flexible. That is, the outcome of the reflective process should be a preparedness to adjust gaps and discrepancies that are detected during reflection, and to use his/her strengths to take advantage of opportunities in the classroom.

The attributes of intentions/specific locus of control represented in the theoretical framework have been phrased as positive for the internal and negative for the external. In other words, these attributes were possessed by the internal but were absent from the external's intentions.

Recommendation

Development of a Full Attribute LOC Instrument

Internality training programmes require a reliable and valid instrument to identify and monitor internality training performance and the effectiveness of the programmes. It is recommended that such an instrument should effectively enable the discrimination between the four categories of TLOC orientation, that is: Constant Internal, Internal Changer, Constant External, and External Changer.

This research has provided a tool for the development of a new instrument for determining individuals' TLOC orientation, with expanded attributes. The results expanded the original attributes (teacher taking responsibility for students' academic success and failure, classroom management, and teaching methods) to include: appropriate use of feedback, teacher reflection, taking responsibility for influencing students' drive, care, and engagement.

Conclusion

The purpose of the study was to explore possible explanations for the effectiveness of teachers who were internal in their LOC, so that as teacher trainers we could develop targeted internality training to improve teacher effectiveness. In exploring the reasons for the effectiveness of

teachers who are internal, the study can be used as a tool for the development of a theoretical framework of an internality training programme, and of a new TLOC instrument with expanded attributes for monitoring the effects of their internality training.

The study demonstrated that the externals took responsibility for the teaching process but they did not take responsibility for the learning outcomes. In fact, the study suggests that the external teachers are not likely to utilize feedback appropriately or to practise reflection. In taking responsibility for the teaching process only, the externals placed a ceiling on their efforts. They believed that they were already performing at optimum effort level. They believed learning outcomes, for better or for worse, were the results of the students' effort. This particular interaction between teachers' input and output effort provided a critical distinction between an internal and external teacher.

The qualitative approach allowed for the teachers to be studied in their natural professional setting. This provided themes (such as teacher flexibility, teachers attribute responsibility to intrinsic/extrinsic factors, and optimization of input, and optimization input and output effort) that emerged out of the natural setting of the teacher and provided an interpretation of the data that was relevant to their settings. The quantitative approach, on the other hand, allowed for the statistical verification of the existence of the categories of TLOC orientation, and an investigation of item responses, and thus themes, that by discriminating between orientations helped to define them. The presence of the two groups of constants—externals and internals—in the sample was confirmed by the qualitative data that showed the distinctive features for both orientations that also further helped to define them.

References

Ambery, M. E. (2000). *A study of the relationship between kindergarten teacher self-concept attributes and perceptions of locus of control*. Unpublished doctoral dissertation, University of Florida. (UMI Proquest Digital Dissertation, AAT 9968801)

Altman, D. G. (1991). *Practical statistics for medical research*. London: Chapman & Hall/CRC.

Basgall, J. A., & Snyder, C. R. (1988). Excuses in waiting: External locus of control and reactions to success-failure feedback. *Journal of Personality and Social Psychology, 54*(4), 656–662.

Bein, J., Anderson, D. E., & Maes, W. (1990). Teacher locus of control and job satisfaction. *Educational Research Quarterly, 14*(3), 7–10.

Brown, P. (1997). *Student behaviour and teacher-student relationship at a secondary high school for boys.* Unpublished master's thesis, The University of West Indies, Mona.

Caine, R. N., & Caine, G. (1997). *Education on the edge of possibility.* Alexandria, VA: Association for Supervision and Curriculum Development.

Cheng, Y. C. (1994). Locus of control as an indicator of Hong Kong teachers' job attitudes and perceptions of organizational characteristics. *Journal of Educational Research, 87*(3), 180–188.

Cook, L. (2001). *Teachers' locus of control.* Unpublished master's project, The University of the West Indies, Mona.

Cook, L., & Bastick, T. (2003). Improving teaching quality: An examination of two locus of control instruments for monitoring internality training. *Journal of Education and Development in the Caribbean, 7*(1&2), 43–57.

Hawkes, B. B. (1991). Teacher locus of control: Who's responsible? *Education, 111*(4), 475–479.

Kremer, L. (1982). Locus of control, attitudes toward education and teaching behaviors. *Scandinavian Journal of Educational Research, 26,* 1–11.

Kremer, L., & Lifmann, M. (1982). Locus of control and its reflection in teachers' professional attributions. *College Student Journal, 16*(3), 209–215.

Liu, Y., Lavelle, E., & Andris, J. (2002). Experimental effects of online instruction on locus of control. *United States Distance Learning Association Journal, 16*(6). Retrieved from http://www.usdla.org/html/journal/JUN02_Issue/article02.html

Mahan, K. A. (1996). *The interaction of attitude and self-efficacy with innovativeness and locus of control in teachers in a televised training course.* Doctoral dissertation, Texas Tech University, 1996). UMI Proquest Digital Dissertation, AAT9711300

Manger, T., Eikeland, O., & Asbjornsen, A. (2002). The effects of social-cognitive training on students' locus of control. *School Psychology International, 23*(3), 342–354.

Newberry, E. H., & Lindsay, J. F. (2000). The impact of social skills training and challenge course training on locus of control of youth from residential care. *Journal of Experiential Education, 23*(1), 39–42.

Noddings, N. (1992). *The challenge to care in schools.* New York: Teachers College Press.

Northington, C. (1998). *The locus of control of teachers as it relates to individual and contextual factors.* Unpublished doctoral dissertation, New York University, New York.

Norton, J. L. (1997). Locus of control and reflective thinking in preservice teachers. *Education, 117*(3), 401–411.

Pallant, J. (2003). *SPSS survival manual* (2nd ed.). Buckingham, UK: Open University Press.

Parkway, F., Greenwood, G., Olejnik, S., & Proller, N. (1988). A study of the relationships among teacher efficacy, locus of control, and stress. *Journal of Research and Development in Education, 21*(40), 13–22.

Phares, E. J. (1976). *Locus of control in personality.* Morristown, NJ: General Learning Press.

Rose, J. S., & Medway, F. J. (1981). Teacher locus of control, teacher behavior, and student behavior as determinants of student achievement. *Journal of Educational Research, 74*(6), 375–381.

Rotter J. B. (1954). *Social learning and clinical psychology.* New York: Prentice-Hall.

Sadowski, C. J. (1993). Cumulative evidence of the relationship between work tenure and generalized locus of control. *Education, 114*(1), 27–31.

Sherman, T. M., & Giles, M. B. (1981). The development and structure of personal control in teachers. *Journal of Educational Research, 74*(3), 139–142.

Sjostrom, M. P. (2000). *Beliefs and practices of teachers regarding the high failure rate in Algebra 1.* Unpublished doctoral dissertation, Georgia State University, Atlanta.

Sprenger, M. (2005). *How to teach students to remember.* Alexandria, VA: Association for Supervision and Curriculum Development.

Stanton, H. E. (1982). Increasing teachers' internality through the RSI technique. *Australian Psychologist, 17*(3), 277–283.

Stemler, S. (2001). *An introduction to content analysis* (ERIC Digest). College Park, MD: ERIC Clearinghouse on Assessment and Evaluation. (ERIC Deocument Reproduction Service No. ED458218)

Stemler, S. (2004). A comparison of consensus, consistency, and measurement approaches to estimating interrater reliability. *Practical Assessment, Research & Evaluation 9*(4). Retrieved May 17, 2004, from, http://pareonline.net/getvn.asp?v=9&n=4

Stipek D. (2002). *Motivation to learn: Integrating theory and practice* (4th ed.). Boston, MA: Allyn and Bacon.

Time, T. (2006). *Resiliency amongst college students and corresponding mediators: Self-esteem, self-efficacy, locus of control, optimism.* Paper presented at the Western Psychology Association annual convention, California.

Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82,* 81–91.

Teachers' Professional Growth:
Examining the Effect of Teacher Maturity on
LOC Orientation

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Abstract. This research compared the professional growth of Jamaican teachers with those in the United States and Israel. The high correlation (r = 0.845) between age and length of service allowed for two studies to be replicated; one from the US showing increasing internality with increased length of service and the other from Israel showing increasing internality with age. In this research, a modified version of Rose and Medway's Teachers' Locus of Control (TLOC) instrument was used to compare the increases in maturity of self-direction and self-confidence of Jamaican teachers with that of teachers in the United States and Israel. A sample of 205 teachers in the Corporate Area, Kingston, Jamaica completed this study to replicate the findings relating years of service and age to teachers' locus of control orientation as measured using the TLOC scale. T-test and analysis of variance showed no significant difference between Jamaican teachers' length of service, age, and their locus of control orientation. These results imply that Jamaican teachers are not developing the same levels of self-direction and self-confidence as Israeli and US teachers who have similar years of teaching experience. It is suggested that in-service development programmes should address these particular shortfalls in professional growth of Jamaican teachers.

Introduction

Locus of control (LOC) is a personality construct identified by Rotter (Phares, 1976). This construct refers to the extent to which people perceive reinforcements as due to their own efforts (Internals) rather than to luck, fate, or powerful others (Externals). This conceptualization of two categories of LOC points to distinctions between social perception, with internals depending more heavily on inner sources as compared with externals who tend to hold social pressures accountable for their actions. Internals are perceived to be more active than externals in their efforts at shaping their environment and in their willingness to correct personal shortcomings (Cheng, 1994; Phares, 1976).

It is important to note that people, depending on their age and past experiences, can develop a stable LOC orientation. Lefcourt (1982) points out that one has to be careful in seeing LOC as a trait that is inherent in a person's personality. We need to recognize that personality instruments are approximations of the operations of a construct. We also need to be aware that people do change their minds and perceptions about things. Meaningful experiences encountered by individuals can change their actions and perceived outcomes (Lefcourt). Lefcourt cited several studies that support the hypothesis that there is a positive correlation between age and internality (i.e., internal locus of control). For example, Penk (1969, as cited by Phares, 1976) "found chronological age to be positive correlated with internality as assessed by Bialer locus of control scale" (p. 150). Also included in the above research was a measure of mental age; Penk, using Peabody Picture Vocabulary Test, found that there was also a positive correlation between mental age and internality.

Several studies have indicated that on-the-job experience generates a greater sense of personal control. This disposition may be influenced by a greater understanding of how to affect the systems within the workplace (Kremer & Lifmann 1981; Lefcourt, 1982; Sherman & Giles, 1981). Teachers with less than 5 years teaching experience are initially externally oriented in their LOC and over time they become internal. Inexperienced teachers just starting out their career tend to have more lofty expectations of students; they tend to expect students to more quickly own the learning process. Their expectations tend to be idealistic. They expect that the students will

naturally want to study, learn, do homework, and motivate their own progress in the academic discipline. Literature indicates that older teachers in their 30s and 40s are characterized by a greater degree of creativity. Writers such as Kremer and Lifmann (1981) explain that teachers at the abovementioned ages may have already overcome certain difficulties in their career path, and subsequently express more control of their environment and higher degrees of job satisfaction (Cheng 1994).

Kremer and Lifmann's (1982) results revealed that the two extreme age groups, 20–30 and over 41, were more externally oriented than the 31–40 age group. Sherman and Giles (1981) found significantly higher internal scores by teachers with more than five years experience as compared to teachers with less than five years experience. However, the results did not concur with Cook's (2002); her results indicated that there was no relationship between participants' Teacher Locus of Control (TLOC) orientation and their age and length of service.

Purpose

The purpose of this study was to replicate the US studies of Sherman and Giles (1981) and Kremer and Lifmann (1981), using a more sensitive LOC instrument targeted at Jamaican teachers in order to test if there was a similar "maturity effect" with Jamaican teachers. The background motivation of the researchers in conducting this research was to improve the effectiveness of teachers by providing a framework for developing internality training for teachers. The purpose behind this particular study was to identify teachers who would most benefit from an internality training programme and to ensure that eligibility criteria did not exclude important groups of teachers. Age and length of service were examined in this study using the following research question:

Do Jamaican teachers' age and length of service influence their degree of LOC internality?

In examining the above research question, teachers in the Corporate Area (Kingston, Jamaica) completed the TLOC scale in order for the researchers to ascertain comparative data

between the US and Israel findings relating years of service and age to TLOC orientation.

The above discussion suggested that as teachers increase in age and years of teaching experience, they tended to become more internal. The discussion also provided support for a link between increased internality by training and improved teaching performance.

Methods

The research design of this study replicated the design used by two studies (Kremer & Lifmann, 1981; Sherman & Giles, 1981). Teachers' length of service was categorized as less than five years or greater than five years; teachers' age was categorized into three groups:

- 21 – 30 yrs
- 31 – 40 yrs
- 41 and over

In addition, the data were collected using the Rose and Medway Teachers' Locus of Control instrument, whereas the above studies (Kremer & Lifmann, 1981; Sherman & Giles, 1981) utilized Rotter's I-E scale, which was never designed to measure locus of control within the teaching context, "nor was the scale intended to be highly predictive of classroom variables and teaching outcomes" (Rose & Medway, 1981, p. 186). Also, numerous scales have been designed for specific settings and purposes, such as health; for example, "Children's Health Locus of Control" developed by Parcel and Meyer, 1978; "Mental Health Locus of Control Scale Questionnaire" constructed by Hill and Bale in 1981. It was expected that using the TLOC instrument would be more targeted and would yield a more significant result.

Instrument

The TLOC questionnaire was developed by Rose and Medway (1981) to measure the extent to which teachers held themselves responsible for students' success and failure in the classroom. This instrument was geared only for classroom teachers and so far has been utilized only in the classroom (Cook & Bastick, 2003; Northington, 1998; Rose & Medway, 1981; Stanton, 1982). This questionnaire, with modifications, was used

in this research to measure teachers' belief in their control and to determine the extent of the relationship, if any, between teachers' LOC and teachers' age and length of service.

Scoring of Teachers' Locus of Control Instrument

The teachers were asked to choose between three options (a, b, or c). In addition, the modified TLOC instrument instruction required that teachers rate their answer by giving a continuous score of 0–100 for a, b, or c:

- 0 meaning no contribution
- 100 meaning maximum contribution

The modified TLOC questionnaire consisted of 21 forced choice items. Each question was scored as follows:

- "-1" was given for each external answer
- " 1" was given for each internal answer

Initially, dichotomous scores were calculated for each teacher using summations of minus 1 or positive 1. Continuous scores were calculated by multiplying the dichotomous scores with the associated percentages. Each teacher was given two final scores—an internal or external dichotomous score and an internal or external continuous score. The continuous scores facilitated a more sensitive scoring of responses to the TLOC instrument.

Sample

Copies of the TLOC scale were administered to 225 teachers: 210 of the copies of the questionnaire were collected, of which 5 were incomplete; and 15 copies were not returned to the researcher at the end of the data collection. The 205 teachers represented 21% of the total population of the 12 high schools.

The sample consisted of 175 females and 50 males with a mean age of 32 years. This sample of teachers had an average of 9 years teaching experience. The teachers were all high school teachers, specializing in different subject areas such as mathematics, literature, history, Spanish, and technical drawing.

Hypotheses and Statistical Analysis

T-test and analysis of variance (ANOVA) were employed to determine the influence of teachers' length of service and age on their TLOC orientation. Bivariate correlation was used to ascertain the relationship between age and length of service.

Hypothesis 1 tested the relationship between age and length of service. Results hypotheses 2a and 2b responded to Research Question 2:

Research Question 1

Is there a relationship between teachers' age and length of service?

H_0: 1 There is no relationship between teachers' age and length of service.

Research Question 2

Do internals and externals have the same mean age and length of teaching experience?

H_0: 2a Teachers with internal scores are not different from teachers with external scores with respect to their mean age.

H_0: 2b Teachers with internal scores are not different from teachers with external scores with respect to their mean length of teaching experience

Cronbach's Alpha was computed for responses to the TLOC instrument to determine the internal consistency—the degree to which the items that made up the instrument were all measuring the same construct (TLOC). The values ranged from 0 to 1, with higher values indicating greater reliability. Pallant (2003) noted that a Cronbach Alpha 0.70 and greater is acceptable. Other quantitative analyses included statistical tests for normality and descriptive statistics.

Results

Test for Normality

The histogram and the normal probability plots diagrammatically showed how the TLOC scores tended to be normally distributed (see Figures 1 and 2).
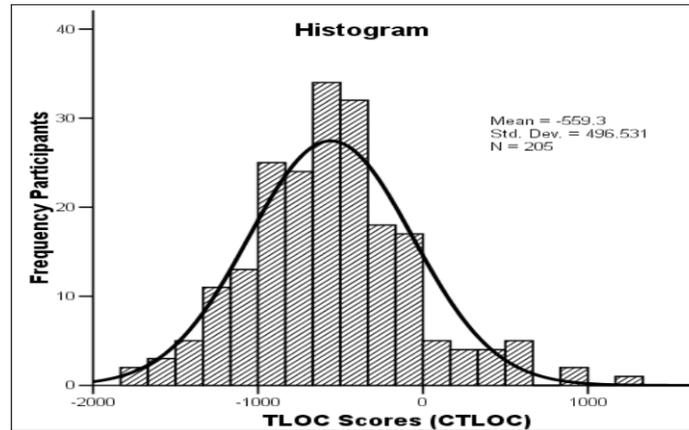

*Figure 1.* Distribution of the TLOC scores.
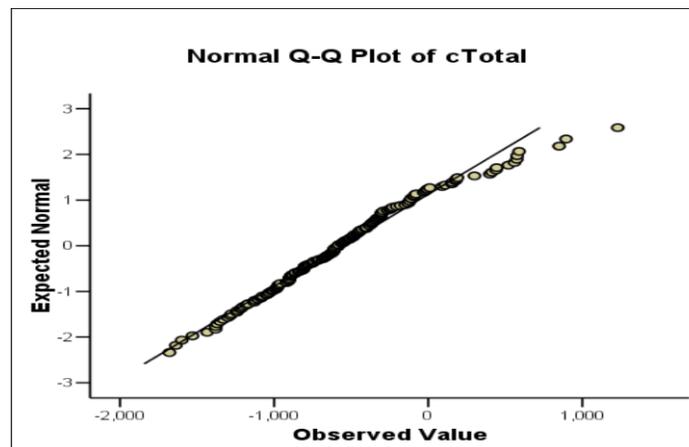
Figure 2. Normal Q-Q plot of the TLOC scores.

The above results were confirmed with the Kolmogorov-Smirnov (K-S) test. The result from the K-S test in Table 1 showed, at the $p<0.05$ level, that the sample is unlikely to have come from a normal population. The result of 0.183 was non-significant. The K-S test confirmed the likelihood of the sample coming from a normal distribution. This indicated that parametric statistical techniques would be more appropriate.

Table1. One-Sample Kolmogorov-Smirnov Test

		cTotal
N		205
Normal Parameters(a,b)	Mean	-559.30
	Std. Deviation	496.531
Most Extreme Differences	Absolute	.076
	Positive	.076
	Negative	-.032
Kolmogorov-Smirnov Z		1.093
Asymp. Sig. (2-tailed)		.183

a Test distribution is Normal.
b Calculated from data.

Internal Consistency of Instrument

The internal consistency of the TLOC instrument for both the dichotomous scores and the continuous scores was moderately high using Cronbach Alpha, 0.70 and 0.71 respectively (see Tables 2 and 3). This also suggested that the two types of scoring did not contradict each other.

Table 2. Reliability: Continuous Scores

N of Cases = 205.0
N of Items = 21
Alpha =   .71

Table 3. Reliability: Dichotomous Scores

N of Cases = 205.0
N of Items = 21
Alpha =   .70

Testing for Significant Relationship Between Teachers' Age and Length of Service

To verify the relationship between age and length of service, Hypothesis 1 was tested using correlation: *H$_0$: 1 There is no relationship between teachers' age and length of service.*

Hypothesis 1 was rejected. The results indicated that there was a strong relationship between teachers' age and their length of service. As teachers increase in age their length of service also increased (see Table 4). We can observe that age was significantly correlated with length of service ($r = .852$, $p < .01$).

Table 4. Correlation Between Age and Length of Service

		Age	Length of Service
Age	Pearson Correlation	1	.852**
	Sig. (2-tailed)	.	.000
	N	178	172
Length of Service	Pearson Correlation	.852**	1
	Sig. (2-tailed)	.000	.
	N	172	196

**.· Correlation is significant at the 0.01 level (2-tailed).

Testing for Significant Differences Between Two TLOC Orientations

In order to ascertain the influence of age and length of teachers' experience on TLOC orientation, t-test and ANOVA were generated to test the following hypotheses:

H_0: *2a Teachers with internal scores are not different from teachers with external scores with respect to their mean age.*

H_0: *2b Teachers with internal scores are not different from teachers with external scores with respect to their mean length of teaching experience.*

Null hypotheses *2a and 2b* were not rejected. Teachers with internal scores did not differ significantly from teachers with external scores with respect to their length of teaching, their age, and experience. Results of t-test and ANOVA can be seen in Tables 5, 6, 7, and 8. Results showed that teachers' age and length of teaching experience did not have any significant effect on participants' TLOC orientation (F= 2.649, p> 0.05; t = -.753, p=0.452, respectively) (see Tables 6 and 7).

Table 5. ANOVA: Age and TLOC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1311859.411	2	655929.706	2.649	.074
Within Groups	43588222.388	176	247660.354		
Total	44900081.799	178			

Table 6. Post Hoc: Age and TLOC

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
21-30	31-40	-120.163	83.980	.327	-318.67	78.34
	41 and over	-222.413	102.577	.080	-464.88	20.05
31-40	21-30	120.163	83.980	.327	-78.34	318.67
	41 and over	-102.250	109.587	.620	-361.28	156.78
41 and over	21-30	222.413	102.577	.080	-20.05	464.88
	31-40	102.250	109.587	.620	-156.78	361.28

Table 7. Descriptive: Length of Service and TLOC

	Length of Service	N	Mean	Std. Deviation	Std. Error Mean
cTotal	Less than 5 years	78	-593.36	439.356	49.747
	More than 5 years	119	-540.19	511.825	46.919

Table 8. T-test: Length of Service and TLOC

		Levene's Test for Equal of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Differenc
cTotal	Equal variances assumed	.796	.373	-.753	195	.452	-53.166
	Equal variances not assumed			-.777	181.302	.438	-53.166

Discussion

Do internals and externals have the same mean age and length of teaching? The results did not establish any statistical significant relationship between age, length of service, and TLOC orientation. This is contrary to Kremer and Lifmann's (1982) results where they found that the two extreme age groups, 21–30 and over 41, were found to be more externally oriented than the 31–40 age group. Sherman and Giles (1981), however, found significantly higher internal scores by teachers with more than five years experience as compared to teachers with less than five years experience. However, the results did concur with Cook's (2002), whose results yielded no relationship between participants' TLOC

orientation and their age and length of service. This implies that internality training should not be restricted to younger teachers. It also indicated that the scores of an LOC measure could be the most discriminating factor in deciding on teachers who would benefit most from internality training.

The results also suggest a need for continuous professional development programmes within the schools for teachers, as the results from this study suggest that teachers were not experiencing career maturity. Evans (1997) noted that newly trained teachers, through observation of what older teachers do or listening to what others such as the principal and other teachers say about teaching and students' learning, fail to use methods and apply concepts learned in teachers' college; instead these newly trained teachers line up their

teaching approaches with the norms of the workplace. Evans cited one interviewee's remarks: "The teachers in the system do a lot of note giving. They give notes. I find that if I used that with the class it worked, even though the college advised against it. If they were too excited, I'd start giving notes and they would settle" (p. 82).

Teacher training institutions need to explore the development of a continuous professional development programme in the school system. As guardians of education, training institutions are not only responsible for the training of new teachers but they should also be concerned with the continued empowerment of teachers in the classroom. These development programmes should involve the continued development of self-confidence and responsibility towards their students.

References

Cheng, Y. C. (1994). Locus of control as an indicator of Hong Kong teachers' job attitudes and perceptions of organizational characteristics. *Journal of Educational Research, 87(3),* 180–188.

Cook, L. (2002). *Teachers' locus of control.* Unpublished master's project, The University of the West Indies, Mona, Jamaica.

Cook, L., & Bastick, T. (2003). Improving teaching quality: An examination of two locus of control instruments for monitoring internality training. *Journal of Education and Development in the Caribbean, 7(1&2),* 43–57.

Evans, H. (1997). Making the transition from college to classroom: What knowledge do teachers use and why. *Caribbean Journal of Education, 19*(1)*,* 73–87.

Kremer, L., & Lifmann, M. (1981). Personal characteristics of teachers, situational variables and deliberation in the process of planning instruction. *Research in Education, 26(11),* 20–29.

Kremer, L., & Lifmann, M. (1982). Locus of control and its reflection in teachers' professional attributions. *College Student Journal, 16(3),* 209–215.

Lefcourt, H. M. (1982). *Locus of control: Current trends in theory and research.* Hillsdale, NJ: Lawrence Erlbaum.

Northington, C. (1998). *The locus of control of teachers as it relates to individual and contextual factors.* Unpublished doctoral dissertation, New York University.

Pallant, J. (2003). *SPSS survival manual.* Buckingham, UK: Open University Press.

Phares, E. J. (1976). *Locus of control in personality.* Morristown*:* NJ: General Learning Press.

Rose, J. S., & Medway, F. J. (1981). Teacher locus of control, teacher behavior, and student behavior as determinants of student achievement. *Journal of Educational Research, 74*(6)*,* 375–381.

Rotter J. B. (1954). *Social learning and clinical psychology.* New York: Prentice Hall.

Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Consulting and Clinical Psychology, 43(1),* 56–67.

Sherman, T. M., & Giles, M. B. (1981). The development and structure of personal control in teachers. *Journal of Educational Research, 74(3),* 139–142.

Stanton, H. E. (1982). Increasing teachers internality through the RSI technique. *Australian Psychologist, 17(3),* 277–284.

Selected Teachers' Pedagogical Content Knowledge of the Transatlantic Trade in Enslaved Africans (TTEA)

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Abstract. This paper presents teachers as the main source of secondary school students' content knowledge of the Transatlantic Trade in Enslaved Africans (TTEA). It investigates what content knowledge teachers in select parts of the Atlantic world communicate to students; what informs the approaches they employ in their teaching; and how students respond to this knowledge at the affective level. The findings serve as a contribution to teachers' professional development for teaching the TTEA at a time when international attention is increasingly focused on the TTEA and its legacies. A thematic approach is used to discuss the historiography of the TTEA. Three geographic sites: the Americas/Caribbean, Africa, and Europe, provide the broad context of the study on which the paper is based. The UNESCO Slave Route Project and Transatlantic Slave Trade (TST) Education Project serve as its programmatic background. The conceptual framework for the interpretation of the findings relies heavily on Shulman's (1987) concept of pedagogical content knowledge, its emotional dimension as elaborated upon by Jerry Rosiek (2003) and Nate McCaughtry (2004); concepts of human development as proposed by the UNESCO International Commission on Education for the Twenty-first Century, and Lorrie Shepard's (2000) reformed vision of the curriculum.

The Phenomenon of the Transatlantic Trade in Enslaved Africans (TTEA)

Scholars in the Caribbean and beyond have been examining the TTEA as a phenomenon in world history for over 100 years. There is a rich tradition of interpretation of the TTEA within the Caribbean and in the wider world. From as early as 1804, when the state of Haiti was declared by the formerly enslaved persons who wrote their constitution, the view was set out that slavery was a crime against humanity and that all human beings aspire to freedom, thereby registering the Caribbean intellectual tradition and strong objection to slavery and the TTEA.

John Jacob Thomas (1889/1969), C.L.R. James (1989), and Eric Williams (1944) are among the early scholars who examined the TTEA as a phenomenon in world history. Michael Manley (2000) makes the point that in the 19th and early 20th centuries Caribbean people were at the mercy of "a history of perceived injustice," without the benefit of the means of understanding how that history had been shaped. Eric Williams (1944) launched his seminal thesis, *Capitalism and Slavery*, in this uncertain historical landscape. Manley indicates that the analysis underpinning this work challenged traditional thinking to shed light on historical truth.

Caribbean people's perceptions of their history and of their location within it were redefined in *Capitalism and Slavery* (Williams, 1944). Collectively, Williams' books are recognized as forming an important contribution to Caribbean historiography. The impact of his work was both intellectual and political. Caribbean historian Colin Palmer (2000) applauds Williams for his uncompromising challenge of the paradigms used for the writing of history. Modern scholars have built upon this tradition, thus producing a rich historiography on all aspects of what is now agreed was a human tragedy.

Walter Rodney, in his examination of Europe's dominance of the worldwide trade system, emphasizes the dialectical relationship between development and underdevelopment, and notes that "the two help produce each other by interaction" (1972/2000, p. 1) He states that for four and a half centuries, going back to the 15th century, the developed and underdeveloped parts of the capitalist world had been in continuous contact, and over this period Africa contributed to the development of Western Europe to the same degree that Western Europe contributed to Africa's underdevelopment.

The TTEA was a global event with significant

economic, political, and cultural impact on the Atlantic World and beyond. Blackburn (1997) describes the Atlantic slave trade as being responsible for the establishment of one of the largest systems of slavery in human history; one that was very significant given the businesslike principles that informed its conduct, scale, and destructiveness. Commenting on the reality that enslaved Africans met their own subsistence needs over one or two days' work per week and laboured for the slave owners the remainder of the time, he states that the rate of exploitation of the enslaved Africans had few parallels, even among other slave systems.

Director General of UNESCO, Koïchiro Matsuura, in a message observing the United Nations International Year to Commemorate the Struggle against Slavery and its Abolition in 2004, described the TTEA and slavery as constituting one of the darkest chapters in the history of the world, given its duration, its extensiveness, and its consequences. UNESCO estimates that the trans-Saharan trade in enslaved Africans, (conducted primarily by the Arabs from the 7th to the 19th centuries in Africa, the Mediterranean, and the Indian Ocean) transported about 12 million people, while the TTEA deported between 15 and 18 million enslaved Africans in a shorter time.

The phased abolition of the TTEA commenced during the period 1806–1808. In regard to abolition, 2006 was of particular significance for Trinidad and Tobago, Guyana, and St. Lucia, while other Caribbean countries commemorate the bicentenary of the abolition of the TTEA over the period 2007–2008.

Given the importance of the TTEA in world history, its impact upon development in Europe and the New World, and its socio-economic and cultural legacies, the author, using the method of a multi-site qualitative case study, sought to understand selected teachers' pedagogical content knowledge of the subject in the following regions and countries over the period 2001–2004:

1. *Americas/Caribbean*: Barbados, Brazil, Dominican Republic, Jamaica, Trinidad and Tobago, USA
2. *Africa:* Benin, Senegal, the Gambia
3. *Europe*: England, Denmark

Sampling and Sources of Data Collection

Teachers, administrators, and students interviewed for the investigation were identified using the following criteria: (a) Teaching the TTEA in the context of the UNESCO Associated Schools Project Network (ASPnet) Transatlantic Slave Trade (TTEA) Education Project, or (b) Participating in the project as administrators or students. Thirty-nine persons were interviewed in this inquiry: 33 teachers, 2 administrators, and 4 students. The findings are therefore heavily skewed in the direction of *teaching* the TTEA, and the focus of analysis is teachers' pedagogical content knowledge of the subject.

Pedagogical Content Knowledge

Pedagogical content knowledge is defined as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (Shulman, 1987, p. 7). The concept of pedagogical content knowledge highlights a number of important issues that need exploration for the understanding of teaching as a practice.

The skills in conveying knowledge to others form part of being an expert teacher, and these skills are referred to by Shulman (1987) as "pedagogical content knowledge … it includes knowledge of the most effective examples, analogies, and explanations for key topics to a domain. It includes 'the ways of representing and formulating the subject that makes it comprehensible to others'" (p. 9).

Pedagogical content knowledge is considered to be central to the knowledge base of the teaching profession and as being necessary for expert teaching. Aspects of pedagogical reasoning that are seen as explaining teacher cognition and behaviour are comprehension, transformation, instruction, evaluation, reflection, and new comprehension. Together, these constitute Shulman's (1987) model of pedagogical reasoning and action.

Skilled teaching is dependent upon mastery of the subject matter; however, subject matter expertise by itself is not sufficient for skilled teaching. Also very critical is the ability "to manage subject-specific ideas and to choose specific teaching methods almost instantaneously

in highly fluid classroom situations" (Bruer, 1993, p. 281). Bruer emphasizes the requirement that teachers command their subject matter and pedagogical skills; that they be sensitive to their student audience; and that they be able to integrate these almost at once, to either create a new learning opportunity for students or to remove a learning obstacle.

Since teaching leads to new understanding on the part of both teacher and student, there is little room for teacher ignorance, even in student-centred forms of education where initiative is given to students (Shulman, 1987). Shulman presents the following definition of pedagogical content knowledge: "It represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organised, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction" (p. 8). Four major sources for the teaching knowledge base are identified. They are:

1. scholarship in content disciplines;

2. the materials and settings of the institutionalized educational process (e.g., curricula, textbooks, school organization, etc.);

3. research on schooling and other related phenomena that impact upon teachers' practice; and

4. the wisdom of practice.

Scholarship in content disciplines. Content knowledge, the first source of the knowledge base, relates to what students should learn in terms of knowledge, understanding, skills, and disposition. It rests on the twin pillars of (a) the body of literature and studies in the content areas, and (b) historical and philosophical scholarship on the nature of knowledge in the content areas. The teacher ought also to be familiar with alternative theories of interpretation and criticism in the content areas and their relevance to curricula and teaching issues.

A teacher needs to understand subject-matter structures, conceptual organization principles, and the principles of inquiry relating to two types of issues in each field of study: the domain's important ideas and skills, and how new ideas are added and inadequate ones discarded by the producers of knowledge in the field. The

implications of this interpretation of the sources of content knowledge are that teachers must have a depth of understanding of the subjects they teach as well as a breadth of liberal education to enable them to accommodate both old learning and new understanding.

Since the teacher is the primary source of student understanding of the subject matter, he/she has a special responsibility in the area of content knowledge. The teacher's manner of communicating understanding to students indicates to them the essential and peripheral elements of a subject. A flexible and multifaceted understanding is required by the teacher in a context of student diversity, in order to share alternative perspectives on the same principles or concepts. Since the teacher also, inevitably, transmits to students ideas about the ways in which truth in a field is determined, as well as attitudes and values that inform student understanding, this calls for depth of understanding of subject-matter structures, and enthusiasm on the part of the teacher. These aspects of content knowledge are a "central feature of the knowledge base of teaching" (Shulman, 1987, p. 9).

Educational materials and structures. Educational materials and structures include curricula, their scopes and sequences, and general governance mechanisms. The principles, policies, and facts of the functioning of educational structures represent a major source for the knowledge base as well. These comprise the contextual conditions that can facilitate or inhibit teaching efforts.

Formal educational scholarship. Formal educational scholarship is focused on understanding schooling processes, teaching, and learning. It is noted that "the philosophical, critical and empirical literature which can inform the goals, visions and dreams of teachers is a major portion of the scholarly knowledge base of teaching" (Shulman, 1987, p. 10).

Wisdom of practice. The rules of conduct of the practices of able teachers constitute wisdom of practice. An important research agenda must be to work with practitioners to develop into an organized system "representations of the practical

pedagogical wisdom of able teachers" (Shulman, 1987, p. 11). The organization and interpretation of data on the wisdom of practice among inexperienced and experienced teachers makes it possible to deduce principles of good practice that can inform educational reform.

Shulman's (1987) Model of Pedagogical Reasoning and Action

Comprehension. Shulman (1987) asserts that teaching must be based on understanding. Comprehension, therefore, refers to subject-matter structures and ideas within and outside the discipline. Teachers are expected to understand what they teach and even to have several understandings of what they teach. They need to understand the interrelationship of given ideas within the same subject area and also in other subject areas. They also need to understand the educational goals of the specific area of teaching content knowledge. While the goals of education transcend the understanding of particular texts, the texts are, nonetheless, important to achieving these goals.

Transformation. The knowledge base of teaching is characterized by the intersection of content and pedagogy. This resides in a teacher's ability to transform his/her content knowledge into powerful pedagogical forms that adapt to students' ability and background variations. Ideas that are understood must be transformed to be taught. In the act of teaching, reasoning involves the teacher thinking through the subject-matter into learners' minds and motivations.

Selection. In the selection phase of pedagogical reasoning and action, the teacher moves from representations to instructional forms or methods. An instructional repertoire of approaches or strategies of teaching is assessed. This repertoire can include conventional lectures, cooperative learning, project methods, discovery learning, and learning outside the classroom.

Adaptation and tailoring to student characteristics. Adaptation engages the teacher in fitting material to the students' characteristics. The kinds of questions that are posed in the process of adaptation relate to: (a) relevant aspects of student

ability, gender, age, language, culture motivations, or prior knowledge and skills that are likely to influence how they receive different forms of representation and presentation; and (b) student "conceptions, misconceptions, expectations, motives, difficulties or strategies" (Shulman, 1987, p. 17) that might inform their approach, interpretation, understanding, or misunderstanding of the material. Tailoring forms part of the adaptation process. In tailoring, the material is fitted to the specific students in the teacher's class as opposed to students in general. The specific characteristics of the class must be taken into account.

Instruction. Instruction refers to the variety of teaching acts and entails many critical aspects of pedagogy—management, explanation, and discussion—as well as strategies relating to effective direct and heuristic instruction. According to Shulman (1987), there is a strong relationship between comprehension and teaching styles employed. Flexible and interactive teaching techniques are not available to a teacher who does not understand the topic to be taught. Instruction involves teaching acts such as group work presentations, discovery or inquiry instruction, and observable forms of classroom teaching.

Reflection. Reflection refers to teachers reviewing and critically analysing their teaching, thus learning from experience. This can be solely on the basis of memory. Teachers review their teaching against what they set out to achieve.

New comprehension. Pedagogical reasoning and action leads to new comprehension "both of the purposes and of the subjects to be taught, and also of the students and of the processes of pedagogy themselves" (Shulman, 1987, p. 19). However, reflection does not lead automatically to new comprehension. Rather, new comprehension is facilitated by documentation, analysis, and discussion.

The processes of Shulman's model are not intended to represent fixed stages, as their sequencing can vary. Indeed, some stages may not even be present at times, or they may be shortened or lengthened.

The Emotional Dimension of Pedagogical Content Knowledge

Amidst all the reform work in education and the growing literature relating to teachers and students and educational change, there is ignorance or undervaluing of the emotional dimension of teaching (Hargreaves, 1998).

Human experience, including learning, is emotional. Education does not take place without the translation of ideas and knowledge into emotion, interest, and volition. Learning goes beyond understanding the abstract content of ideas; it also involves self-discovery in relation to new ideas: "It involves surprise, revelation, delight and sometimes outrage" (Rosiek, 2003, p. 399). However, teacher education researchers have given limited consideration to teachers' understanding of student emotion as part of teachers' practical knowledge. Rosiek cites three reasons that render the recognition of teachers' practical knowledge about student emotion desirable:

1. There is empirical evidence that student emotion influences teachers' decision making. Teachers respond to students' affective and cognitive response to the subject matter being taught. Quite often, teachers must anticipate how specific topics and tasks will impact students' emotional response.

2. Educational scholars from a broad range of disciplines have declared that emotions feature prominently in the learning process.

3. There is a moral necessity to promote responsiveness to students' emotional experience of learning, and particularly so in respect of students who are on the cultural fringes of school culture, or who are very unsuccessful or disadvantaged in any other way. It is necessary to document and analyse teachers' understanding of students' emotional response to curriculum content.

This will supplement research focused primarily on the cognitive dimensions of teachers' practical knowledge.

There are other arguments in support of emotional understanding in education. These concern teachers relating to students and empathizing with their life circumstances; being perceptive of their emotional engagement with subject matter, and understanding the classroom's social dynamics, that is, whether the classroom's social climate was facilitating or inhibiting learning (McCaughtry, 2004).

A shortcoming of pedagogical content knowledge theory and research has been its tendency "to eliminate teacher knowledge of student emotion from analyses of how teachers think students learn" (Rosiek, 2003, p. 33). This perspective is also shared by McCaughtry (2004). Indeed, teacher knowledge of student emotion is seen to be integral to understanding student learning. Teacher interpretation of and response to student emotion are key aspects of their pedagogical content knowledge. Understanding students' emotions may be as pivotal to effective decision making about content, curriculum, and pedagogy as the understanding teachers have of students' prior knowledge, motor skill development, or knowledge and skill acquisition patterns (McCaughtry, 2004).

The findings of a collaborative research process on pedagogical content knowledge, over a 10-year period and involving both intern teachers and more experienced teachers, focused on the ways scaffolding for student learning is provided by teachers (Rosiek, 2003). Scaffolding is described as an output of Vygotsky's (1997) social psychology, which refers to the ways in which teachers assist students to cognitively frame their learning experience. Within this research process, scaffolding, with the aim of influencing students' emotional responses to an idea, or emotional scaffolding, generated considerable interest and discussion. Documenting and analysing the practice of emotional scaffolding brings an emotional dimension to the understanding of pedagogical content knowledge (Rosiek, 2003). A prominent part of teachers' efforts to "transform" subject matter is their attention to student emotion (Shulman, 1987). In order to do this, teachers use their understanding of students' cultures, backgrounds, and attitudes to schooling. The emotional dimension of pedagogical content knowledge is therefore shaped by culture and local context (Rosiek, 2003).

An Emotional Scaffolding Typology

Distinctive approaches to emotional scaffolding suggest implications for ongoing debates concerning the extent to which the practical knowledge of teachers can be generalized or is dependent upon context (Rosiek, 2003). Two principal patterns of emotional scaffolding, as reported by Rosiek, are discussed below. These relate to the kind of emotion and teachers' choices for addressing students' emotional response to subject matter.

The kind of emotion. In the investigation reported by Rosiek, teachers, in some cases, tried to lower the intensity of unconstructive emotions about a topic or concept. In other cases, they tried to increase constructive emotions about an idea or subject. All uncomfortable emotions were not deemed *unconstructive* emotions.

Discomforting emotions such as anger or sadness can often serve to draw students more into the subject matter being taught. Unconstructive emotions are those that distract students from the subject matter content or otherwise inhibit their learning. *Constructive emotion*, on the other hand, refers not to just any positive emotion but rather to emotions that pull students more closely into the important aspects of the subject matter being taught.

Teachers choices in addressing students' emotional response. Teachers offered emotional scaffolding either explicitly, addressing students' emotions directly; or implicitly, that is, by avoiding discussion of student emotions but nonetheless planning for them in a lesson.

Since human emotions are complicated, these distinctions between types of emotional scaffolding are considered to be rudimentary, and would need to be refined by further research. Avoiding oversimplification of the emotional dimension of teaching requires critical attention to the role of context in influencing emotion in the classroom and the ability of teachers to interpret that emotion. Emotional scaffolding was made possible by teachers having context-specific knowledge. Scholarly attention to assisting students in building emotional as well as cognitive relations to what they are learning is needed (Rosiek, 2003). Future research in this area

potentially holds significant implications for teacher education curricula. It is possible that there exists a noteworthy overlap of the ways in which teachers think about student emotion, subject matter specifics, and teaching's social and cultural context. This warrants attention to integrating these three areas in teacher education curricula (Rosiek, 2003).

Another study reports one teacher's emotional understanding and the ways in which such understanding merged with her knowledge of content, curriculum, and pedagogy (McCaughtry, 2004). These included the teacher listening to her students' feelings about their learning, which helped her to assess how they were advancing through the content; knowing how students were affiliating emotionally with content, other students, and teachers in the process of learning; and understanding the unique perspectives of students of different ethnic groups, different skill abilities, and different temperaments.

The Reformed Vision of the Curriculum

Shepard (2000), American educator and educational administrator, offers perspectives on the cognitive revolution that are relevant to this inquiry into teachers' pedagogical content knowledge of the TTEA. These observations include the following:

1. The cognitive revolution reintroduced the concept of mind.

2. The cognitive revolution interprets learning as involving active mental construction and sense making, which contrasts with mechanistic theories of knowledge acquisition of the past.

3. Learning is either enabled or impacted by existing knowledge structures and beliefs. This underscores the importance of content knowledge and mastery of that knowledge by teachers. However, the cognitive alone does not produce learning as beliefs can serve as emotional filters to either enable or impede learning.

4. Self-monitoring and awareness about when and how to use skills contribute to intelligent thought.

5. A principled and coherent way of thinking and representing problems as opposed to accumulation of information constitutes "expertise" in a field of study.

These elements of the reformed vision of the curriculum also inform the discussion of the findings of the study.

Human Development, History Teaching, and Citizenship

Human Development

Learning: The Treasure Within, the *Report to UNESCO of the International Commission on Education for the Twenty-first Century,* acknowledges that every part of education contributes to human development and that development should ensure "the full flowering of the human being and not as a means of production" (UNESCO, 1996, p. 79). It states further that people's understanding of themselves and others must form part of responsible development, so that they are able to participate in collective societal undertakings. In highlighting the state of human development, the report cites some of its key dimensions as presented in the UNDP *Human Development Report* (1995). These dimensions relate to the following:

1. The process of human development enlarges people's choices, and among the essential choices are the acquisition of knowledge and access to resources necessary for a decent standard of living.

2. Additional choices that are generally highly valued are in the domain of enhancing the quality of human lives. They encompass political, economic, and social freedom; opportunities for being creative and productive; and the enjoyment of personal self-respect and guaranteed human rights.

3. Human development addresses all societal issues (economic growth, trade, employment, political freedom, or cultural values) from the perspective of people. This implies that education must go beyond narrow utilitarian purposes and "should serve to make human

beings not the means but the justification of development." (p. 80)

The four pillars of education. Learning: The Treasure Within (UNESCO, 1996) also elaborates upon four pillars of education that are considered the bases of education throughout life. These pillars are: (a) learning to know, (b) learning to do, (c) learning to live together, and (d) learning to be. These four pillars must also be seen as contributing to human development. In particular, learning to live together and learning to be can be greatly facilitated by teaching the TTEA. Learning to live together is achieved through an understanding of others, appreciating interdependence, and learning to manage conflicts with due regard for "the values of pluralism, mutual understanding and peace" (p. 97). Learning to be is supportive of the concept of education as "above all an inner journey whose stages correspond to those of the continuing maturing of the personality" (p. 95). Teaching and learning about the TTEA can serve this purpose of self-discovery.

History Teaching and Citizenship

René Rémond (1998), French political scientist, expresses the view that respecting historical truth and the rules of historical method can ensure that the propagation of history and of research findings can contribute to greater social cohesion, which should be among the ultimate aims of any education system. Rémond identifies benefits history can offer and reasons for history having an important role to play in the education of citizens for the 21st century. He states that history can make possible a clearer understanding of the place of the individual in society. The significance of the collective experience of humankind should be clearly exposed for the benefit of the young. The transition of societies from violence to the rule of law is an outcome of history that remains insecure, and the preservation of such outcomes requires the full support and active participation of all members of society.

This political scientist advocates that historians make value judgements in the teaching of history and describe actions for what they are, pointing the finger of blame. He expresses the view that "some actions merit condemnation, some practices

are reprehensible and history cannot remain absolutely neutral" (p. 347). History, therefore, has a very important contribution to make to society. However, Rémond argues that teachers have not been prepared to make such judgements and, further, may not feel themselves entitled to do so as their own judgement may not be either sound or firm enough. He thus argues for preparing teachers to fulfil this role of history:

> Hence the basic problem is to train teachers in such a way that they will be able to draw out from history the lessons it furnishes. An education system that fails to provide teachers with such training is clearly failing in its duty by neglecting not only to give instruction in citizenship but also to develop abilities and aptitudes in individuals that are part and parcel of their personalities. (p. 348)

Rémond (1998) offers the following guiding principles for teaching history and influencing citizenship. They also appear to be compatible with the concept of human development:

1. History should not become a means of indoctrination or conditioning.

2. Teachers must be allowed time to think and must acquire a deeper appreciation of their potentially vital contribution to a more profound reflection upon social or political philosophy.

3. History teaches respect for complexity and the discovery of complexity is an essential aspect of training in citizenship.

4. Knowledge of history is useful to people engaged in action. It enables differentiation between what has been inherited from the past, and what can and cannot be changed. Memory assists people in determining where they fit in.

5. History facilitates a pluralist outlook as one is led to go outside of one's tradition to discover others that deserve consideration.

Teachers' Presentation of Content Knowledgeof the Transatlantic Trade in Enslaved Africans (TTEA)

Teachers interviewed taught history, social studies, African studies, sociology, special education, and library studies and had between 5 and 30 years experience. Several had received higher education training, in some cases up to the level of the master's degree. One university lecturer was at the time completing his Doctor of Philosophy degree in education and one administrator held a Doctor of Philosophy degree in African studies.

For the purpose of this study, content knowledge of the TTEA was presented from a thematic perspective as follows:

(i) Supply of Enslaved Africans to the New World

(ii) How Enslaved Africans were Used

(iii) Slavery in Brazil

(iv) Africans in Western Europe in the 18th Century

(v) The Triangular Trade

(vi) The Role of European Countries in the TTEA

(vii) Major Slave Trading Ports

(viii) The Duration of the Slave Trade

(ix) How Enslaved Africans were Shipped

(x) The Middle Passage

(xi) The Number of Enslaved Africans a Typical Slave Ship Crossing the Atlantic Carried

(xii) Maroons

(xiii) Toussaint L'Ouverture

(xiv) Why the Slave Trade to the Caribbean was Stopped

(xv) The Human Tragedy of the TTEA

With regard to **Thematic Area (i): Supply of Enslaved Africans to the New World,** teachers dealt with various dimensions of Africa being the source of supply of enslaved Africans, as well as with some quantitative content knowledge. While several teachers taught the involvement of Africans in the TTEA, Teacher H from the Gambia seemed to be the most uncompromising in confronting this issue. The researcher speculates that her readiness to confront this issue so squarely is likely to be a consequence of her personal

experiences of suffering at the hands of her own people, fleeing a civil war in her country of origin, Sierra Leone, and being forced to live in exile in the Gambia.

Some teachers drew attention to the fact that slavery was not unique to Africa and that there was also slavery in Europe. The nature of slavery in Africa, the role of the Europeans in the TTEA, and modern forms of slavery in Africa were also addressed as part of this thematic area. Other areas of content knowledge dealt with under this theme included tribal origins of the enslaved Africans and the concept of market networks within Africa to service the Atlantic economic system.

Either explicitly or implicitly, teachers related **Thematic Area (ii): How Enslaved Africans Were Used** to issues of social structure, power, and influence, as evident in their presentation of content knowledge relating to the following: work done by children; distribution of enslaved Africans by jobs and gender; treatment of people according to their jobs or status as an enslaved person; the important positions that enslaved people in Africa sometimes had; the sexual exploitation of enslaved children and women; the role of eunuchs; a pyramid for the classification of the enslaved, with the resulting hierarchy that this created; the distinction between slavery in Africa and slavery in the Americas; and Blacks working on ships in Bristol and in the British army.

Thematic Area (iii): Slavery in Brazil was not taught by most of the teachers, and one reason advanced for this was inadequate time. The few teachers who taught this theme dealt with it in the context of the ports of arrival of enslaved Africans, the cultural impact of the African presence in Brazil, and differentiation within the system of slavery.

In regard to **Thematic Area (iv): Africans in Western Europe in the 18th Century,** where it was taught, it was not linked only to slavery. However, there was an exploration of a changing Black presence in Europe at the time—from one of more status to a service-related presence, with the dehumanization of the African through the TTEA. Only two teachers in the UK dealt with Olaudah Equiano, considered to be a significant historical figure in the history of the TTEA. Among the teachers not teaching this theme, the reasons cited were rooted in the structure of the history syllabus

(the Caribbean Examinations Council (CXC) in the English-speaking Caribbean) and relevance.

Several teachers emphasized **Thematic Area (v): The Triangular Trad**e. The actual movement of goods across the three regions and the impact of the trade on African culture and American culture were among the areas of emphasis.

With reference to **Thematic Area (vi): The Role of European Countries in the TTEA**, Britain was the major focus in teaching, though across the three regions, there was also evidence of a focus on the role of other European countries such as Portugal, Spain, France, and Norway. While similarities in the treatment of this theme were noted across the three regions, there was also variation in treatment within a country, as in the case of the UK, the USA, and Barbados. In general, content taught communicated to students that European nations became wealthy as a result of their involvement in the TTEA.

In respect of **Thematic Area (vii): Major Slave Trading Ports**, London, Liverpool, and Bristol were the principal ports of focus for the teachers in the UK and Denmark. Spanish ports were taught by teachers in Brazil, Senegal, and Benin. Additionally, Teacher G in Benin also taught the port of Nantes. Teachers in Jamaica mentioned Antigua and Barbados in addition to the major ports in the UK. Teachers in the Gambia, Barbados, and Trinidad and Tobago did not focus on any specific ports.

There was evidence of variation in teaching **Thematic Area (viii): The Duration of the TTEA**. Slavery and slave trading were presented by some teachers as ongoing human activity, into modern times. Specific time frames that teachers gave as the duration of the TTEA ranged from 700 years, to 500 years, to over 300 years, to over 400 years and continuing. The pattern of responses did not reveal any tendency on the part of the teachers from Europe or Africa to minimize the duration of the slave trade.

In regard to **Thematic Area (ix): How Enslaved Africans Were Shipped**, several teachers addressed the conditions on board the slave ships, thus highlighting the inhumanity of the trade. Other areas of content knowledge taught included the size of the boats, the placement of enslaved Africans on the ships, enslaved Africans treated as commodities, revolts of enslaved Africans on board the slave ships, and the role of

Africans in shipping their own people. While teachers from all geographic regions dealt with this theme, they seemed to do so in varying degrees, with Teacher F in Benin providing his students with a wider range of content knowledge.

Teachers focused significantly on **Thematic Area (x): The Middle Passage**. Content knowledge that they examined with their students included the actual trauma and conditions of The Middle Passage and its place in the overall organization of the trade.

Teachers' treatment of **Thematic Area (xi): The Number of Enslaved Africans a Typical Slave Ship Crossing the Atlantic Carried** fell into three basic categories. These were: (a) providing students with actual numbers ranging from 300 to 900 on a slave ship and explaining that the slave ship always carried a number of enslaved Africans in excess of its carrying capacity, in the interest of making as much profit as possible; (b) refraining from discussing numbers because of the ongoing debates among historians on this issue and because of the difficulty in accessing numbers; and (c) adopting the position that it was not effective to discuss large numbers with students in isolation, that it was important to discuss the numbers in the context of current realities. Several teachers were guided by the position that it was difficult, if not impossible, to know the number of enslaved Africans traded in the TTEA.

Teaching **Thematic Area (xii): Maroons** was greatly facilitated by proximity to actual Maroon settlements and relevant observances such as national heritage celebrations in the case of Jamaica. Teachers also dealt with the theme of resistance when they taught Maroons. With the exception of SGO in the Dominican Republic, absent from the content knowledge presented by these teachers were the issues of Maroons and runaways in other islands and in South America. Jamaica emerged as a main case study in relation to the Maroons.

Thematic Area (xiii): Toussaint L'Ouverture was taught principally by the teachers in the English-speaking Caribbean and French-speaking Africa. His role as the ideal hero was questioned by Teacher T (i) in Trinidad and Tobago.

Where **Thematic Area (xiv): Why the Slave Trade to the Caribbean was Stopped** was taught, teachers focused on the following:

abolition, human rights, and the French Revolution; in Brazil, the various forms and means through which different sections of the Brazilian population pursued abolition; the legal frameworks that were put in place; the reality of the economic considerations and the impact of qualified immigrant labour on abolition— perspectives which seem to relate to issues that distinguished the process of abolition in Brazil. Teachers also addressed the role of Whites in the abolition movement and the role of enslaved Africans themselves in the process of their liberation.

In regard to **Thematic Area (xv): The Human Tragedy of the TTEA**, teachers seemed to adopt various approaches. Teachers in the UK and Denmark either tended to emphasize statistical information or approached the theme with some sense of distance, largely because of the difficulty and delicacy involved in teaching the subject, or advocated not focusing too much on the human tragedy. The teachers in Africa focused on the impact of the TTEA on the underdevelopment and instability of Africa. The teachers in the Caribbean communicated a sense of personal involvement in dealing with this thematic area. They encouraged their students to think about the way the enslaved Africans might have been thinking, to put themselves in their position, and to consider the larger issues such as being condemned to servitude for life and the process of dehumanization that this involved. The impact of the TTEA on the human development of people of African ancestry was also an area of concern.

Teachers' Organization of Content Knowledge of the Transatlantic Trade in Enslaved Africans (TTEA)

Main themes around which content knowledge of the TTEA was organized included: slavery as a long-established idea and the TTEA as part of a European turning point, the positive contributions of Africans, slave transportation in the triangular slave trade, and "the African situation" and involvement of Africans in the TTEA. Concepts included: the enslaved African, the humanity of the enslaved African, overcoming hardship, the myth of the passivity of enslaved Africans, valuing

the African race, Afrocentrism, and socialization and control.

Teachers employed a diversity of teaching strategies. Multidisciplinary approaches were emphasized as well as the arts. Imagery (pictures, drawings, paintings), both print and materials accessed from the Internet, were used as well as videos and film. Minimum use was made of a timeline exercise. Several teachers spoke to the value of the use of maps. Group work and project work proved popular.

Field trips to Places of Memory were undertaken in those countries where such places were easier to identify than in Trinidad and Tobago, for example, where much of this kind of living history was said to be lost. Developing students' "high-order thinking" and their ability to identify and appreciate concepts as a means of learning was a concern expressed by a few teachers.

In one instance (Teacher T (i), Trinidad and Tobago), students were encouraged to cite their sources of information as evidence for their views and opinions. Role-play and dramatization were used to a fair degree. However, only one teacher (Teacher N, in the USA), allowed students choice in their learning. She also proved unique in her recycling of the subject of the TTEA through the history curriculum, both to centre slavery in US history and to overcome the problem of limited teaching time.

Teachers identified a range of strategies that they considered to be most successful in teaching the TTEA. These included group work or group projects, field trips to Places of Memory, role-play and dramatization, artistic work, creative expression, and exposing students to actual sources and having them build their own interpretation.

The challenges of teaching the TTEA, as identified by teachers, included the following:

- access to appropriate teaching and learning resources, principally text and technology resources and images

- appreciating the complexities of the TTEA, that things are never "black and white"

- appreciating African heritage and identity

- reinterpreting the history of the TTEA from the perspective of the enslaved Africans

- presenting US History from a more global perspective

- upgrading teachers' knowledge of the subject

- having sufficient time to teach, so that students would develop an emotional attachment to the subject of the TTEA, and time for teachers to do research in preparation for teaching

- teaching from a multidisciplinary perspective

- students researching information on their own, as a means of learning

- students expressing their own views and thinking critically and analytically

- access to computers and the Internet

- changing students' perceptions about West Africa to have them appreciate that there had been a West African civilization

- access to Places of Memory (in Trinidad and Tobago) to support teaching the TTEA

Even within the constraints of their official curriculum, several of these teachers can be considered "Maroons" in their efforts to escape the restrictions of their education system where teaching the TTEA is concerned. This characteristic of "educational marronage" seemed to be inspired by their concern to ensure the relevance of their teaching to their students' human development needs, such as appreciating their ancestry and valuing their identity as descendants of Africans; developing survival skills to deal with poverty and adversity; and a general appreciation of the modern world, shaped by living socio-economic and cultural legacies of a significant phenomenon in history, the TTEA.

The insight of Teacher D in the UK, a teacher trainer, that teachers will not teach something until they feel they have the confidence and appropriate resources for classroom use, and which was confirmed by several teachers in different countries, sends a strong signal of the need for specially designed teacher training interventions for teaching the TTEA. Such organization required a degree of radicalism on the part of some teachers

and notably teachers in the United Kingdom (UK). Themes and concepts served as organizing principles and myriad teaching strategies served as means of organization. These were quite varied and particularly so in the United States of America (USA). Ongoing professional development of teachers was recognized as an important element in teachers' ability to organize and impart content knowledge with depth and full understanding.

Some Emotional Dimensions of Selected Teachers' Pedagogical Content Knowledge of the TTEA

Teachers in all regions acknowledged the TTEA as an emotive subject and were keenly attuned to their students' emotional responses. Teachers in Barbados, Jamaica, and the Gambia, all female, were particularly focused on the need to be balanced and objective in teaching the TTEA. One teacher in the UK adopted a "clinical approach" to the subject.

In terms of the emotions teachers observed in their students, these included sadness, sorrow, and outrage, resulting in tears, as testified by teachers in the UK, Barbados, Jamaica, Trinidad and Tobago, and the Dominican Republic. In the UK, some students' feelings of resentment and anger were said to be linked to their concerns about injustice and inhumanity rather than with a personal identification with the enslaved Africans, or with the racism involved in the TTEA. In the USA, students' emotional responses of anger and sorrow were described as making them become resolute to improve their own lives.

Some students in the UK, Denmark, and Barbados, according to their teachers, expressed confusion, disbelief, and horror that a phenomenon such as the TTEA could have occurred. However, in the UK and Jamaica, there were also students who manifested a lack of interest in the subject and denial of their African heritage, while in Jamaica some students experienced feelings of inferiority and expressed boredom with history because of the teaching methods.

Not all of the emotions experienced by teachers and students were negative. Some students in Barbados and Trinidad and Tobago felt a sense of pride on learning about their African heritage, while students in Trinidad and Tobago were said to have manifested a heightened interest in history. Students in the USA were described as developing an increased capacity for empathy with others. In the case of Trinidad and Tobago, Indo-Trinidadian students empathized with the history of enslavement of Afro-Trinidadians.

A sense of satisfaction with teaching the TTEA was experienced by teachers in the UK, Jamaica, and Trinidad and Tobago. However, this feeling of satisfaction also resulted in a sense of confusion within one Trinidad and Tobago teacher since the subject of the TTEA caused him pain and made him angry. Indo-Trinidadian teachers in Trinidad and Tobago, like their students, also empathized with the history of enslavement of Afro-Trinidadians.

Teaching methodologies employed were seen as affecting students' emotional responses and, in particular, visits to Places of Memory were viewed as enabling students to establish a personal link with the history of the TTEA.

Teachers from Denmark, USA, Benin, Barbados, and Trinidad and Tobago referred to some strategies used to cope with their students' emotional responses to learning about the TTEA. These included encouraging students to develop their points of view based on knowledge; providing students with avenues to express their feelings, validating these feelings, and guiding students through their emotions; focusing on the strengths of the enslaved Africans—the fact that they resisted their enslavement and their capacity to overcome; and encouraging dialogue amongst the descendants of all those who were involved in the TTEA.

These insights and understandings are useful in facilitating a fuller appreciation of the complexity of teaching an emotive subject such as the TTEA. They can inform approaches to teacher education for the purpose of teaching the TTEA, particularly with respect to strategies to successfully manage students' emotions evoked by the subject in the classroom setting. The effective management of these emotions must be seen as a very important dimension to teaching the TTEA to contribute to students' understanding of themselves, their self-discovery, and their human development.

Discussion of Findings

Comprehension: Teachers' Lack of Knowledge

Given that a teacher's knowledge base can be considered a first key input for comprehension, it is noteworthy that, throughout this inquiry, several teachers have referred to their lack of knowledge of particular areas of content knowledge of the TTEA. This lack of knowledge must therefore be seen as having a negative impact on the level of expertise of several of the teachers in this inquiry. The researcher believes this to be so as teacher confidence and expertise come with knowledge and the requisite pedagogical skills, backed up by appropriate teaching materials. Teachers' confidence and expertise are essential to the quality of students' learning.

Transformation: Teachers Transform Content Knowledge of the TTEA

Several teachers in this study stood out in their efforts to transform their content knowledge of the TTEA through their pedagogy, to create a positive impact on the minds and lives of their students, in the interest of their personal enrichment and development, and beyond preparing them to pass an examination. Stimulating students' critical thinking, building empathy, and encouraging their creative expression were some of the strategies employed to this end.

Preparation: Critical interpretation. A few teachers spoke of their efforts at deconstructing what must be taught, which required a certain degree of radicalism on their part. This process engaged these teachers in preparation or the critical interpretation of the given text materials—the first process involved in transformation as presented by Shulman (1987). Elements of interpretation, critical analysis, and structuring, which were evident in teachers' narratives, included identifying themes and concepts for teaching the TTEA and the identification of the purposes behind these themes and concepts. For example, nomenclaturing (enslaved vs. slave) was used to "disempower the enslaver" and to use more humane nomenclature to refer to enslaved Africans. While such preparation is likely to involve some degree of planning on the part of the selected teachers, they did not make much mention of their preparation in terms of lesson planning, for example. Rather, they tended to focus on specific issues relating to organization of their teaching (which is a dimension of planning) and interaction with their students.

Representation. A second process involved in transformation is that of representing ideas using new analogies and metaphors. Representation engages the teacher in thinking through the main ideas of the text or lesson and finding alternative ways of representing them to students. There was evidence in the study of teachers in the UK and the USA, for example, engaging in this process by organizing their teaching of the TTEA around themes that could be conveniently incorporated into the official curriculum, which, as structured, did not allow much opportunity for teaching the TTEA.

Where the structure of the curriculum did include teaching the TTEA, as in the case of the English-speaking Caribbean, teachers in Barbados, for example, reported teaching using an Afrocentric perspective, also indicative of pedagogical reasoning based on transformation. The representation or reinterpretation of content knowledge of the TTEA from an Afrocentric perspective was intended to adapt content knowledge of the TTEA to students' general characteristics and needs.

Selection. Table 1 summarizes strategies used by the teachers interviewed to teach the TTEA. These strategies are indicative of these teachers' repertoire of teaching approaches and they reflect instructional methods known to be used by expert teachers as indicated by Shulman (1987). Selection of teaching strategies is a third element of Shulman's model.

Table 1. A Summary of Teaching Strategies Used to Teach the TTEA

Teaching Strategy	Used in
Telling the story of the TTEA from the perspective of the enslaved Africans	USA
Multidisciplinary approaches	Brazil, Jamaica, Trinidad and Tobago, UK, USA
The arts (music, poetry, creative expression, theatre, storytelling)	Brazil, Trinidad and Tobago, UK, USA
Use of imagery (pictures, drawing, paintings)	Jamaica, Trinidad and Tobago, UK, USA
Use of videos (e.g., Roots series) and film (e.g., Amistad), slide presentations	Trinidad and Tobago, UK, USA
Use of timeline exercise	UK
Use of maps	Brazil, Trinidad and Tobago, UK
Group work/project work	Barbados, Benin, Denmark, Senegal, the Gambia (to be used in future)
Students engage in individual research	Brazil, the Gambia, Trinidad and Tobago, USA
Linking the history of the TTEA to students' current reality	USA
Allowing students choice in researching and learning	USA
Field trips to places of memory/heritage sites	Benin, Brazil, Jamaica, Senegal, USA
Use of the Internet	USA, UK (Teacher D, teacher trainer)
High-order thinking/pulling concepts together	USA (Teachers R and S), Trinidad and Tobago
Recycling the subject of the TTEA in the history curriculum to overcome the problem of limited teaching time	USA
Use of statistics	UK (Teacher C), Denmark, Trinidad and Tobago, USA
Encouraging students to cite their sources of information	Trinidad and Tobago
Guest speakers	USA, Jamaica
Travel programme	USA

Adaptation and tailoring to student characteristics: Teaching materials, teaching approaches. Teachers in Barbados and the UK were concerned about finding materials at a reading level suited to their students. In the UK, teachers had to incur additional costs of money and time in an effort to tailor teaching materials to their students' characteristics. Most of the teachers, in varying degrees, showed evidence of having engaged in tailoring their teaching to cater to the specific characteristics of their students. This was evident in the following:

- strategies to link teaching the TTEA to students' current realities

- sensitizing students, through culture, to respect and value Blacks

- emphasizing the involvement of Whites in the anti-slavery movement so that students would not think that all Whites were wicked

- drawing a parallel between the TTEA and the drug trade, described as being evident in the

surrounding school community

It would appear that, in the case of the last strategy, efforts at adaptation and tailoring overlap with representation mentioned above, given the use of the analogy between the slave trade and the drug trade.

These processes of preparation, representation, selection, and adaptation and tailoring to student characteristics, described above, are involved in transformation—an element of pedagogical reasoning and action—as described by Shulman (1987). They inform a plan or set of strategies for the presentation of a lesson, unit, or course, and are reflected in these teachers' approaches to teaching the TTEA.

Instruction: The Challenge of the Multidisciplinary Approach

Teachers employed a range of instructional strategies to facilitate their students' learning and development. These included the following:

- presenting students with different perspectives on an issue and then encouraging them to present their own point of view

- engaging students in research to enable them to discover something for themselves

- group work

- questioning, discovery, and inquiry: turning around the story of the TTEA and starting to tell it from the perspective of the enslaved Africans

- teaching students to learn to use a variety of sources and to refer to sources to support their points of view

- promoting students' creativity and artistic expression

- the development of a special curriculum, infused into the regular curriculum, to guide teachers in their classroom instruction, without the use of textbooks

- setting aside a particular day to teach the TTEA using this curriculum

- exploiting the regenerative power of the spoken word through the use of guest speakers

- engaging students in journal writing with the support of an academic.

The range of methods of instruction used by these teachers, as well as the variety of subjects through which attempts have been made to teach the TTEA, are indicative of the methodology of the multidisciplinary approach. However, it was not evident to this researcher that teachers had mastered the pedagogy of multidisciplinary teaching.

A multidisciplinary approach juxtaposes several disciplines around a theme, idea, or concept, with no attempt to integrate them. It requires planning as it involves teamwork among teachers. Teachers must be familiar with and employ a variety of strategies to sustain students' interest, as well as to cater to their diverse needs and abilities. Teaching strategies are dependent upon aims and objectives of teaching (Melville-Myers, 2001). One very experienced teacher identified teaching from a multidisciplinary perspective as his greatest challenge, and this would seem to be an important area to be integrated into workshops and seminars that address teachers' professional development related to teaching the TTEA.

Resources to Support Instruction

Significant use was made of film, videos, pictures, maps, and Places of Memory. Some use was made of CD-ROMs, Internet sources, and PowerPoint presentations. Teachers spoke of the need for more resources to support instruction. These included: "more voices of people who fought against the slave trade," and especially more voices of women; "the remnants, the artefacts associated with slavery"; textbooks and technological resources appropriate for lower and average ability students; and visual resources and larger quantities of relevant and appropriate materials. The production of the kind and quantities of resources that seem to be in demand is an issue to be considered seriously in terms of the allocation of funding and the identification of educators with the requisite skills for the production of such resources.

Reflection

Instances of teachers engaging in reflection were evident in their articulation of the challenges of teaching the TTEA. Individual teachers reflected on different issues. These included contradictions arising out of their socialization—a self-image fostered by the experience of slavery and its continued angst. They reflected on their efforts to be as comprehensive as possible in their teaching, in the limited time available; to have their students understand certain concepts; and on the need to have the opportunity and time to meet and reflect with other teachers about their teaching. They were aware of their own lack of knowledge and the need, therefore, to upgrade their own knowledge of the subject to enable their students to arrive at a deeper understanding of the TTEA, within a certain amount of time. They wanted to be able to teach successfully using an interdisciplinary approach and to motivate male students. They lamented the loss of teaching time when they have to rework material to make it more attractive to students, but recognized the importance of changing students' perceptions of Africa and establishing the relevance of teaching

the TTEA. Indeed, many of the challenges identified by teachers reflected issues that directly concerned their own teaching, such as their knowledge base. They seemed to accept it as their personal responsibility to address this**.** This is particularly important given the paucity of information available for schools, issues relating to the ideological slant of the knowledge, and the challenges of sustaining that knowledge in school contexts.

These teachers also reflected on the need to give their students certain dispositions to be able to treat with the familiar and the unfamiliar. They reflected on issues relating to students' identity formation and their recognition and celebration of different cultures. They were sensitive to students' feelings of shame, guilt, and denial of the history of the TTEA and its legacies, and, in a few cases, even to students' feelings of hostility provoked by this history. They were of the view that education about the TTEA, if effective, could help their students to overcome these feelings. They recognized that in teaching the TTEA, there is need to manage a set of contradictory voices and to understand what needs to be done to challenge attitudes of mind.

Shulman's (1987) model of pedagogical reasoning and action facilitates a fairly in-depth understanding of teachers' practice and the emerging issues in relation to teaching the TTEA. Given the context of these findings, that is, based on an international UNESCO project and an inquiry that is transatlantic involving three different regional sites across the globe, they are indicative of many instances of good teaching practice, which can be built upon to develop teacher education curricula for teaching the TTEA. The findings regarding these selected teachers' needs to be able to teach the TTEA more effectively can also inform teacher education curricula for the professional development of other teachers to teach the subject.

The Emotional Dimension of Teachers' Pedagogical Content Knowledge of the TTEA

The responses of teachers interviewed in this inquiry confirm the affirmation of Rosiek (2003) and McCaughtry (2004) that human experience is emotional since, in all of the three regions constituting this multi-site case study, almost all of the teachers acknowledged the TTEA as an emotive subject.

The fact that, in all three regions, the teachers interviewed were keenly attuned to their students' emotional responses supports the finding of McCaughtry that teachers' understanding of emotion in the classroom is an integral part of their pedagogical content knowledge. Anticipation of students' emotions, which might have been discomforting in the classroom context, seemed to have influenced teachers' decision making. Some teachers were concerned with trying to reduce unconstructive emotions, such as prejudice or bias against Whites, which could inhibit students' appreciation of the fact that Whites were also very instrumental in abolishing the slave trade or that Africans themselves sold their own people into slavery.

Several teachers commented that the subject of the TTEA stimulated their students' desire to talk, an indication that they were very likely listening to their students and in tune with their feelings. This is a finding also reported by McCaughtry (2004) in his research involving an experienced teacher who demonstrated a high level of emotional understanding.

Teachers' descriptions of students wanting to talk and of their emotions, including sadness, sorrow, anger, and outrage, on learning about the TTEA, reflect Daniel Goleman's (1995) families of emotions, and validate Dewey's (1931/1980) tenet that education takes place when ideas and knowledge are translated into emotion, interest, and volition.

As reported by Beverly Daniel Tatum (1992), discomfort, avoidance, denial, and guilt are some common human reactions to race-related subject matter. Teachers in this study commented on how hard the subject of the TTEA was to teach; how difficult to handle. The importance of context in understanding emotion in the classroom was highlighted, with the explanation that the subject was particularly hard to teach when White teachers taught Black students who might feel that they were learning something negative about themselves. This was an enlightening observation since it highlighted the perspective that although Blacks were the victims of the TTEA, they were the ones expected to be more psychologically

oppressed by this history. Nonetheless, in the Caribbean context, teachers did report the discomfort of White students on being taught the TTEA by Black teachers, and their own uncertainty about how to deal with their White students' discomfort. Black students were also said to be inclined to deny their African heritage and there were reports of students' feelings of inferiority. Rosiek (2003) indicates that unconstructive emotions inhibit students' learning. Teachers, therefore, need to be trained to respond appropriately to such unconstructive student emotions, if their teaching is to have a positive impact on their students' development. Students' self-image must be seen as a critical component of their personal development. Teaching methodology was said to impact upon students' emotions; students becoming more emotionally engaged when visiting Places of Memory. Such emotional experiences were seen as facilitating student learning. It was reported, however, that not possessing the skills to handle students' emotions in the classroom, some teachers avoided teaching the TTEA, out of fear of a backlash.

Students' constructive emotional responses, such as feelings of pride, sparked their interest in the subject matter of the TTEA and facilitated their learning. These emotions of students, their heightened interest in the subject matter of the TTEA, and their increased learning had as a parallel teachers' own constructive emotions and their increased sense of satisfaction, accomplishment, motivation, and enjoyment, in relation to teaching the TTEA. The complexity of the emotions of students and teachers alike points to the importance of the context of teaching in relation to teachers' own emotion in the classroom, and underscores the concern of Rosiek (2003) that care must be taken not to oversimplify the issue of classroom emotion.

While the interviews with teachers did not explicitly explore the issue of emotional scaffolding, as elaborated by Rosiek (2003), teachers, nonetheless, did provide some evidence of this, as reflected in the insights they shared regarding ways of coping with the emotional dimension of teaching the TTEA.

Implicit approaches to emotional scaffolding, as indicated by teachers' attempts to foster students' constructive emotions in relation to the TTEA, were: (a) raising the discussion of the TTEA to a higher level, (b) providing students with avenues to express their emotions, and (c) focusing on the resistance of enslaved Africans and their capacity to overcome suffering. Explicit or more direct approaches to elicit students' constructive emotions were: (a) taking students to Places of Memory to stimulate their interest and their learning, and to build empathy; and (b) guiding students through their emotions. Teachers' implicit approaches to emotional scaffolding, so as to reduce their students' unconstructive emotions when learning about the TTEA, were as follows:

- focusing on being balanced and objective in their teaching
- adopting a clinical approach to the subject
- encouraging students to develop their point of view based on knowledge
- "de-dramatizing" the TTEA

Teaching the TTEA: The Reformed Vision of Curriculum and Human Development

Elements of Shepard's (2000) observations about the cognitive revolution and the reformed vision of the curriculum also inform this discussion of the findings of the study. These elements are: the concept of the mind, learning as active mental construction and sense making, the function of emotional filters, self-monitoring and awareness, and teacher expertise. Other manifestations of the reformed vision of the curriculum are also discussed.

The Concept of the Mind

Shepard's (2000) observations about the reformed vision of the curriculum can be applied to teaching the TTEA. The historiography of the TTEA is challenging subject matter given the breadth of its content knowledge, the ongoing debates surrounding some key issues, and the diversity of interpretations of that knowledge in the Americas/Caribbean, Africa, and Europe. The development of students' minds, for example, in developing their critical thinking skills to comprehend the subject matter of the TTEA and understand its relevance to their lives and to the contemporary world is important.

Learning as Active Mental Construction and Sense Making

Teaching the TTEA engages students in asking questions and going beyond the texts, images, and illustrations presented to them to seek to uncover other clues that can inform learning. It engages students in checking various sources and different kinds of sources as a means of learning. These processes are not mechanistic but oriented towards inquiry and discovery. They are skills that enhance students' capacity for learning to know as an essential aspect of their ongoing human development.

The Function of Emotional Filters

The earlier discussion on the emotional dimension of pedagogical content knowledge of the TTEA is illustrative of the importance of the acknowledgement, in the reformed vision of the curriculum, of the function of emotional filters in either enabling or impeding learning. Such filters can be viewed as part of the inner journey leading to the maturing of the personality and learning to be. If, in the process of navigating the turbulent emotions that can be generated by content knowledge of the TTEA, teachers and students emerge with renewed self-respect, and indeed respect for human dignity, it is possible that teaching and learning about the TTEA would have contributed to enhancing the quality of life for those concerned.

Self-Monitoring and Awareness

Shepard's (2000) observation about the cognitive revolution appears to parallel the concept of pedagogical content knowledge, which promotes the idea that good teaching reflects the intersection of knowledge and effective pedagogy. In this inquiry, teachers, in their narratives, often revealed this intersection in their own experience, since they were frequently sharing with this researcher not only the content knowledge of the TTEA they were teaching but, inevitably, the ways in which they approached their teaching to facilitate students' learning and human development. This is indicative of their ongoing self-monitoring and awareness, a process that parallels Shulman's (1987) process of reflection as an element in

teachers' reasoning and action.

Teacher Expertise

The reformed vision of the curriculum calls for a principled and coherent way of thinking and representing problems, as opposed to accumulation of information, thus constituting "expertise" in a field of study. Here again, there appears to be a parallel between Shepard's (2000) reformed vision of the curriculum and Shulman's (1987) model of pedagogical reasoning and action in relation to teachers' approaches to teaching the TTEA. For Shulman, teacher expertise should have an intellectual basis, which can be informed by an emphasis on pedagogical content knowledge in teacher education curricula.

All of the teachers, in their narratives, provided evidence of principled and coherent thinking in their approaches to teaching the TTEA. However, they seemed to possess varying degrees of an intellectual basis for teaching the TTEA and, therefore, the level of expertise in evidence seemed to vary. The highest level of expertise in evidence was not limited to the English-speaking Caribbean, where the TTEA is an integral part of the formal secondary school history curriculum, and where teachers seemed to have greater levels of content knowledge. Rather, teachers functioning in educational contexts where the TTEA was not a formal part of the secondary school curriculum, notably in the USA, and to a certain extent in the UK, showed evidence of high levels of pedagogical content knowledge and, thus, expertise, where they were confident in teaching specific aspects of content knowledge. In these cases, teachers' expertise was also evident in their pedagogical skills in adapting content knowledge to their students' characteristics.

Other Manifestations of the Reformed Vision of the Curriculum

Other dimensions of Shepard's (2000) reformed vision of curriculum, evident in the findings of this inquiry, are: the importance of the social and cultural context for learning, the impact of the affective and socially supported interactions on the development of cognitive abilities, and the ways in which social mediation also shapes identity.

The reformed vision of the curriculum

promotes as a key principle: "All students can learn." Several teachers in this inquiry have indirectly endorsed this principle in their calls for the right kinds of learning materials on the TTEA for students who may be considered to be of low or average ability. These calls seem to be indicative of teachers' beliefs that all of their students can learn with the support of appropriate pedagogical tools. The reformed vision of the curriculum also calls for equal opportunity for diverse learners. This requires providing genuine opportunities for high-quality instruction and "ways into" academic curricula, consistent with home and community language and interaction patterns.

The crucial importance of the link between the school and the world outside is also underscored in the reformed vision of curriculum. To the extent that teachers were exposing their students to guest speakers, new information communication technologies, Places of Memory, and even travel abroad programmes, they were also implementing the reformed vision of curriculum. The relevance of this is not only to make learning more interesting and motivating to students, but also to develop their ability to use knowledge in real-world settings. Such experience encourages students in learning to do, another essential dimension of their continuing human development.

In addition to developing cognitive skills, the reformed vision of curriculum also seeks to instil in students important dispositions such as a willingness to continue to try to solve difficult problems. Through teachers' pedagogical content knowledge of the TTEA, students are engaged in thinking about a phenomenon in history with very real legacies in the modern world. These legacies pose many difficult societal problems at various levels of daily existence. Knowledge of the history of the TTEA and an understanding of its legacies not only highlight the challenges of learning to live together, but can also assist students in identifying solutions to the resulting contemporary challenges, particularly where their own human development is concerned.

Recommendations

1. The strengthening of teacher knowledge must be seen as an ongoing process in teachers'

professional development, both self-initiated and facilitated by the relevant educational authorities. Sharing of teaching experiences, collaboration with educators in formal and non-formal settings, and opportunities for travel must all be embraced within this process of teachers' ongoing professional development in pursuit of comprehension and mastery of the subject of the TTEA. Ultimately, teachers' professional development should seek to ensure teachers' commitment to improving upon and advancing their knowledge, and being able to organize it through learning experiences for students. Competent teacher development requires a focus on teachers' skills, their knowledge of how to improve those skills, and a commitment to the enhancement and use of their knowledge in collaborative and transformational ways.

2. In addition to the deepening of content knowledge of the TTEA, professional development of teachers should serve to develop their capacity to engage in the processes of Shulman's (1987) model of pedagogical reasoning and action to ensure their preparation for teaching the TTEA with the highest level of pedagogical expertise. This is important as a means of ensuring that teaching the TTEA provides students not only with content knowledge but also with skills supportive of their human development.

3. Teachers must be encouraged to engage in documentation, analysis, and discussion. Such activity can help to produce teachers who are thoughtful, innovative, and research-oriented and who, consequently, can establish for their students a more relevant and appropriate set of learning experiences to facilitate new comprehension about the history of the TTEA and its significance to their lives.

4. Teachers' pedagogical content knowledge for teaching the TTEA from a multidisciplinary perspective should be assessed to identify specific skill areas in need of strengthening.

5. The production of varied types of teaching resources, at the required pedagogical levels and in sufficient quantities, must remain an area of priority; one that parallels that of ongoing professional development of teachers. In

particular, secondary school textbooks should cater to students of average ability who make up the majority of secondary school population.

6. There is need for variety in teaching materials not just in form but also in treatment of content knowledge, organization, and presentation. Further, variety should be reflected in the ways in which teachers package and organize teaching materials in different sociocultural contexts. Teachers, therefore, need access to the process by which historians generate texts and other teaching materials so that they understand the historians' values and orientation. This should allow for teachers to engage more critically with teaching materials.

7. The production of texts and other teaching materials should involve teachers and the mentoring of teachers should be part of this effort. Teachers should be trained in the evaluation, design, and production of materials for classroom use in different sociocultural contexts.

8. There is need to develop clearer understanding about the demands that the emotional dimensions of teaching the TTEA place on teachers.

References

Blackburn, R. (1997). *The making of new world slavery: From the baroque to the modern 1492–1800*. London: Verso

Bruer, J. T. (1993). *Schools for thought: A science of learning in the classroom*. Cambridge MA: MIT Press.

Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.

Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education. 14*(8), 835–854.

James, C. L. R. (1989). *The Black Jacobins* (2nd ed. rev.). New York: Random House.

Matsuura, K. (2004.). Message from the Director-General of UNESCO on the occasion of the International Year to Commemorate the Struggle against slavery and its abolition (2004). In *Struggles Against Slavery: International Year to Commemorate the Struggle Against Slavery and its Abolition* (pp. 42–43). Paris: UNESCO.

McCaughtry, N. (2004). The emotional dimensions of a teacher's pedagogical content knowledge: Influences on content, curriculum, and pedagogy. *Journal of Teaching in Physical Education, (23)*1, 30–47.

Rémond, R. (1998). History teaching and citizenship. In J. Delors (Ed.), *Education for the twenty-first century: Issues and prospects: Contributions to the work of the International Commission on Education for the Twenty-First Century* (pp. 345–350). Paris: UNESCO.

Rodney, W. (2000). How Europe became the dominant section of a world-wide trade system. In V. Shepherd & H. M. Beckles (Eds*.), Caribbean slavery in the Atlantic world: A student reader* (pp. 1–10). Kingston, Jamaica: Ian Randle.

Rosiek, J. (2003). Emotional scaffolding: An exploration of the teacher knowledge at the intersection of student emotion and subject matter content. *Journal of Teacher Education, 54*(5), 399–412.

Shepard, L. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4–14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, *57*(1), 1–22.

Tatum, B. D. (1992). Talking about race, learning about racism: The application of racial identity development theory in the classroom. *Harvard Educational Review, 62*(1), 1–24.

Thomas, J. J. (1969). *Froudacity: West Indian fables by James Anthony Froude explained*. London: New Beacon Books.

Manley, M. (2000). Tribute to Dr. Eric Williams on the Occasion of the International Conference on "Eric Williams and the Post Colonial Caribbean." In H. Cateau & S. H. H. Carrington (Eds.), *Capitalism and slavery fifty years later: Eric Eustace Williams – A reassessment of the man and his work*. New York: Peter Lang.

Melville-Myers, I. (2001). *Teaching the Transatlantic Slave Trade from a multidisciplinary perspective*. Paris: UNESCO.

Palmer, C. (2000). Eric Williams and his inteleectual legacy. In H. Cateau & S. H. H. Carrington (Eds.), *Capitalism and slavery fifty years later: Eric Eustace Williams – A reassessment of the man and his work*. New York: Peter Lang.

UNESCO. (1996). *Learning: The treasure within. Report to UNESCO of the International Commission on Education for the Twenty-first Century*. Paris: UNESCO

United Nations Development Programme. (1995). *Human Development Report 1995*. New York: Oxford University Press.

Williams, E. (1944). *Capitalism and slavery*. London: University of North Carolina Press

Pre-Service Secondary School Mathematics Teachers Exploring Computer Technology in a Caribbean Context: Challenges Encountered

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Abstract. This paper discusses the challenges encountered in an English-speaking Caribbean context as five pre-service secondary school mathematics (PSSM) teachers explored the use of computer technology (CT) in their instructional practices. A conceptual framework of three compatible theories guided the study. The major goals of this study were to investigate the experiences and perceptions of the PSSM teachers, and to identify factors they considered necessary for successful integration. I found that the teachers were faced with similar challenges as those experienced in earlier explorations of developed and developing countries. The PSSM teachers learned that their efforts to move away from the traditional "chalk and talk" approach to a learner-centred approach did lend itself to genuine positive progress in using CT. They further realized that reading and group skills, along with computer literacy, are factors to be considered in their planning when introducing CT use in mathematics instruction in their context.

Introduction

As part of the mathematics reforms of the National Council of Teachers of Mathematics (NCTM) of North America and the Advisory Task Force of the Caribbean Community (CARICOM), it is required that students be able to learn and use computer technology (CT) as an integral part of the learning of mathematics (CARICOM Secretariat, 1993; NCTM, 2000). Some Caribbean countries have been providing their teachers with computer literacy skills and integrating CT in various subject areas (CARICOM Secretariat, 1993; Miller, 1996). However, this innovation is not common in mathematics classrooms, although researchers have seen CT as a tool with capabilities to support an exploratory and experimental environment aimed at improving the teaching and learning of mathematics (Barron & Goldman, 1994; CARICOM Secretariat, 1993; Cousins & Ross, 1993; Hazari, 1991–1992; Larson, 1995; Oliveira, 1989).

Norvak and Berger (1991) reported that teacher education programmes did not prepare pre-service teacher educators to use technology in their teaching, and provided little support on hardware, software, or in-service training. Yet there were demands from school districts, parents, and students for teachers to use CT in their classrooms. Larson (1995) suggested that pre-service teachers needed to understand the potential of these essential tools, have opportunities to apply the tools, be supported in their explorations, and have time to experiment with them. The implications of this approach means that pre-service teachers are not only expected to select and create new instructional materials, but also to learn how to use the technologies with a learner-centred approach in their pedagogy (CARICOM Secretariat, 1993; Graham, 1998; Larson, 1995). A learner-centred approach to teaching is demonstrated when students are allowed the opportunity to explore the meaning of new knowledge using prior knowledge on which to build. The teacher using this approach facilitates and does not dominate or prohibit personal discovery of new meaning from the learner's own style or pace for learning (Huerta-Macias, 1993). For many pre-service teachers, it is challenging to make the change from a teacher-centred approach, which is traditional, to a learner-centred or student-centred approach.

According to Hope (1997), teachers are engaged in a psychological tug-o-war because school leaders and change facilitators pay little or no attention to their perceptions and the challenges

they confront while integrating CT in their classrooms. As educators in developing countries move forward with the integration of CT in mathematics classrooms, it is imperative that the stakeholders take into account the challenges that pre-service secondary school mathematics teachers face in bringing about positive changes when exploring the use of CT in mathematics instruction. A study was conducted in one of the Caribbean contexts to identify the experiences and perceptions of five pre-service secondary school mathematics (PSSM) teachers, since the integration of computer technology in the content areas is seen as a way forward. The research question was:

What are pre-service secondary school mathematics teachers' experiences within the junior high school classrooms as they explore the use of computer technology in their instructional practices in an English-speaking Caribbean country?

Past Experiences in Developed Countries

A review of what has been learned in developed countries from past experiences in implementing CT in the classroom can inform innovators of developing countries. Tharp, Fitzsimmons, and Ayers (1997) and Abramovich and Brown (1996) suggested that using CT as a problem-solving tool in classroom experience can gradually change the lack of knowledge and scepticism of technology into an appreciation for CT when pre-service teachers and students are convinced of the positive benefits technology has to offer.

Additionally, some researchers (Dexter, Anderson, and Becker, 1999; Erickson, 1995; Sandholtz, Ringstaff, & Dwyer, 1992; Scheffler & Logan, 1999; Senge, 1990) had concerns for the following:

- the presence of up-to-date equipment and faculty with technological expertise
- teachers' lack of confidence in their computer skills and lack of motivation
- the motivation of teachers by educating them with the appropriate skills so they can function (i.e., feel a sense of confidence) and facilitate learning in the most suitable manner, that is, promoting high-quality education

- teachers having positive attitudes about an innovation in order for them to encourage similar attitudes in their students
- mentoring demonstrated as an effective model for teacher change
- the presence of support and executive control as an integral part of the change process to maintain a constructive direction
- teachers' instructional styles determined by the way they had learned
- teachers' past role of being information givers changing to one of facilitators and mentors in the classroom
- computers in classrooms not only influencing instruction but also classroom management in positive and negative ways
- lack of appropriate technical support for equipment, reported to be discouraging in the educational setting
- the understanding that the skill of classroom management in a technological environment cannot simply be mastered once and for all
- the understanding that in coping with classroom management, teachers with computer skills must be prepared to demonstrate patience, flexibility, and persistence with a great passion for teaching and learning in the process of trying different things

Yet another researcher, Ropp (1999), developed the Computer Coping Strategies scale to emphasize adaptive coping strategies—the ones students might use when they encounter difficulties in getting the computer to do what they want. The coping strategies, among other individual characteristics such as attitude toward computers, technology proficiency, computer anxiety, and computer self-efficacy[1] have shaped the computing experiences of all individuals, including pre-service teachers (Ropp, 1999). The individual characteristics were identified as being associated with learning to use computers. Consideration of these characteristics has been valuable to teacher educators who are charged with helping pre-service teachers learn to teach with technology (Ropp, 1999). Educators, being aware of the diverse experiences and expertise that students bring to the learning setting, will be better able to integrate this diversity into CT tools for

positive growth. In addition, the lessons learned from the concerns and strategies employed in using CT in developed countries could be instrumental in, or viewed as indicators of, the way forward for future implementation in developing countries.

Conceptual Framework and Context of the Study

A conceptual framework of three compatible theories (Blume, 1991; Senge, 1990; and the learner-centred approach) guided this study. Blume's model consists of three phases. The first phase is to provide mathematics teachers with opportunities to learn with the use of technology. In the second phase, opportunities are provided for mathematics teachers to reflect on their learning in the technological environment. Finally, in the third phase, they have the opportunity to translate their own encounters, which were facilitated by their instructor in a technology-rich environment, into similar encounters for their students. Senge's model consisted of five learning disciplines known as personal mastery,[2] mental models,[3] shared vision,[4] team learning,[5] and system thinking.[6] As previously stated, the learner-centred approach to teaching is demonstrated when students are allowed the opportunity to explore the meaning of new knowledge using prior knowledge on which to build.

The study was conducted in an English-speaking Caribbean country where the use of CT in the subject areas had been initiated. In the English-speaking Caribbean, mathematics is a compulsory subject through primary and the earlier grades (9 and 10) of secondary school education. At the upper secondary level, students' programmes may be more focused on other subject areas. Pre-service mathematics teachers are selected for the teacher education programme based on their interest in the teaching profession and high scores in mathematics on their first attempt at the Caribbean Examinations Council (CXC) examinations.

Methodology

Based on the study's context of a natural setting, and its sensitivity to the local needs and conditions of a developing country (Bogdan & Biklen, 1998;

Crossley & Vulliamy, 1997), qualitative methodology was employed to gain an in-depth understanding of the PSSM teachers' perceptions of the integration of CT in their classrooms. In particular, a case study approach was taken (Yin, 1994), which was identified with the following research question:

What are pre-service secondary school mathematics teachers' experiences within the junior high school classrooms as they explore the use of CT in their instructional practices in an English-speaking Caribbean country?

In the study, five PSSM teachers, Abiola, Levoli, Sean, Wayne, and Yvon (all pseudonyms), volunteered to participate in the study. They were among other student teachers who attended a technology application course, taken in the third and final year of their programme—a hands-on experience of CT integration in a learner-centred environment. Having a specialization in computers within the programme, the participants were purposefully sent to schools with computer laboratories as part of their student teaching placement requirement.

During the technology application course, the PSSM teachers worked individually and in groups on mathematics problems using the TI-83 Plus graphing calculator (TI-83Plus GC) and Math Trek Grades 7, 8, & 9 (MT789) software. On the database of Web Knowledge Forum (WebKF), the PSSM teachers communicated and reflected on (a) the National Council of Teachers of Mathematics (NCTM) Principles and Standards, (b) the integration of CT in mathematics, and (c) their experiences of the use of TI-83Plus GC and MT789. This was ongoing throughout their practicum assignment. At the end of the course, they were given their student teaching assignments to different schools where they had access to a computer laboratory. Each PSSM teacher provided a lesson plan that incorporated the use of CT for each observed session. During student teaching, each PSSM teacher was observed three times. Each observation was for 30 minutes of a full class session ranging from 40 through 80 minutes. In each of these observations, the researcher examined the PSSM teachers' use of technology; rationale for its use; teaching strategies implemented; interactions among students, teachers, and computer technology tool; the

teachers' role in the classroom; and their perception of the exploration. As part of the data collection, each teacher kept a journal of activities and reflections of each lesson. Towards the end of student teaching, 90-minute interviews were scheduled with each participant. Data collected from observations, journals, lesson plans, field notes, and interviews were transcribed, coded, and categorized using Microsoft Word and NUD*IST, a qualitative data analysis software.

Discussion of the Findings

The findings were reported in the study (Junor, 2003) and article (Junor Clarke, 2007) as a case of each PSSM teacher, identifying the themes across the data. The themes were analysed from their reflections on the way they were taught in secondary schools and the changes they were making in their environment as they explored with technological tools, MT789 software and TI-83Plus GC. This provided the opportunity to determine each teacher's views of the changes in their teaching methods. To answer the research question, *What are pre-service secondary school mathematics teachers' experiences within the junior high school classrooms as they explore the use of computer technology in their instructional practices in an English-speaking Caribbean country*" three sub-questions were developed: (1) What is the nature of the interactions observed in the classroom? (2) What is the role of the teacher? and (3) What are PSSM teachers' perceptions of the challenges encountered and the motivation to continue using CT in mathematics instruction? These questions allowed for an in-depth understanding of the phenomenon under study. However, for purposes of this paper, I will focus on the finding of sub-question 3: *What are PSSM teachers' perceptions of the challenges encountered and the motivation to continue using CT in mathematics instruction?* In the next sections, I will provide the challenges and suggestions of the PSSM teachers as they explored CT integration in their instruction and then provide my reflections of their challenges.

PSSM Teachers' Challenges Encountered

The challenges that the PSSM teachers encountered were in different stages of the process towards, and during their exploration of, CT integration in their instructional practices. Challenges and concerns evident in the study were: transition to a learner-centred approach in teaching; availability and accessibility of CT; supporting CT in the mathematics classroom; and coping strategies with time, technology, and classroom management.

Transition to a Learner-Centred Approach in Teaching

Unlike the challenges of the traditional approach to teaching and learning by "the chalk and talk" method, the PSSM teachers recognized the usefulness of a learner-centred approach. These teachers enjoyed using the learner-centred approach in exploring CT and its effect made sense to them. Here are their voices of the experiences and transitions to the approach:

Abiola recalled when she was attending secondary school:

> *Teaching was done in the traditional way, where the teacher gave examples on the chalkboard and the students answered the questions by applying the examples. The questions were chosen from a textbook, and students were asked to answer those questions for homework assignments. The teacher was the one who wrote on the chalkboard and students copied what was on the chalkboard.*

Levoli stated that "*I would definitely appreciate such [NCTM] standards in the Caribbean because teachers in the past have used only "chalk and talk," which I thought of as torture.*" Here, it is evident that Levoli has freed herself from the traditional method of chalk and talk.

As a primary student, Sean learned mathematics by practising math exercises and by taking money and giving change in a shop. In secondary school, he was taught higher-level skills through rote learning and much practice. The more he practised, the better he did in mathematics. He claimed that if he did not know a concept immediately, he would practise it repeatedly until he grasped it. The majority of his teachers in secondary school used the traditional chalk and talk method in which they demonstrated how to do a particular problem on the chalkboard. Sean did

not experience much "discovery" in that method; for example, formulas were given and the students were required to memorize them. He often wondered, "How did teachers come up with these formulas?" He learned the answer to this question in college [teacher education programme].

Changing the instructional tools and method of approach in the mathematics classroom was a revelation for Sean in his training; the change affected him in many ways. Moving away from the traditional teaching style, he realized the effectiveness of the discovery method in mathematics. Sean saw mathematics as a practical subject, and in using MT789 and the TI-83Plus GC he was able to utilize the discovery approach by having students explore on their own. He did not see any disadvantage to using CT and felt that his teaching improved due to the strategies he used.

At secondary school, Wayne learned mathematics mostly by trial and error and constant practice. He was taught by the lecture/chalk and talk method exclusively. Wayne claimed that the classroom environment in which he did his teaching practice was quite different from his experience as a student in secondary school. He remembered that teachers put work on the chalkboard, and checked and marked students' notebooks. These activities were expected to be completed by the end of class. Comparing that time to now, Wayne said that the teacher played a more active role in the classroom today.

Yvon learned mathematics in secondary school using a variety of strategies. When a problem was given she was expected to solve it on her own, and guidance was given when the teacher recognized help was needed:

If a student did not understand a problem, normally in school a teacher would come over and say "where did I lose you?" and the student would say, "Well, Miss, I started out here and then I...." And the teacher would guide the student step by step through the problem. The student would then be able to analyze and say, "oh! I made a mistake." The student would be able to see the mistakes. It is better than telling them the answer. It is a form of the teacher helping the students to see or realize that they have made a mistake and be able to correct it. The "chalk and talk"

method was used most often and occasionally a manipulative tool such as a protractor, ruler, or geo-board was used.

Yvon identified that she needed to learn more to be able to use CT in the mathematics classroom and would take courses in professional development to upgrade her skills.

Based on these PSSM teachers' reflections of the teaching and learning styles in their secondary schools as students, it is evident that they were taught mainly with the chalk and talk method and became more aware of the learner-centred approach in their teacher education programme. In observation sessions, the PSSM teachers were using group activities and facilitating learning in the use of CT in their mathematics instruction. Through these observations and their reflections, the study provided evidence that the PSSM teachers have the tendency to become teachers who will use the learner-centred approach in their classrooms. Abiola, in her interview, described the learner-centred approach as non-traditional and compared it to the teacher-centred approach as blue versus black. She explained what she meant by "blue and black":

The blue represents all the colours but the black is dead drag. In my days, it was black but in their days now [it] is blue because you have that different teacher [one who teaches with a non-traditional approach] and technology has gone a far way from when I was in school so the students have what they need to go on further.

Availability and Accessibility of CT

In many instances, laboratories of 25 computers had to be shared among 35 to 40 students, which meant that at least two students had to share one computer. The multimedia projector was also a limited resource; only two of the five schools had one. Abiola's school had a regular projector that she used with the screen of the TI-83Plus GC.

Yvon realized that the use of one computer with a multimedia projector could accommodate a class of 30 to 40 students. However, having such large schools with arbitrary scheduling made it very difficult to access the facility. Due to the unavailability of an adequate number of computers

for each school, accessibility to the computers became restrictive, and the personnel in charge of these tools were seen [by the PSSM teachers] as controllers who perpetuated distance between the CT tools and the students.

The PSSM teachers made changes in their teaching strategies to facilitate the integration of CT in their instruction. For example, they accommodated the students in cooperative groups to use the limited number of computers or TI-83Plus GCs available to them. They did not have attitudes of scepticism or fear toward CT integration in their mathematics classrooms, unlike the experiences of Abramovich and Brown (1996) and Noss, Hoyles, and Sutherland (1990). Being students with a computer option in their development resulted in a positive attitude towards technology. However, they did have concerns about the continued availability of the technology for teachers and students. Abiola stated that if the resources of CT were available, she would use them perhaps 90% of the time, because information would be processed easily. Instead of doing manual calculations, the students would do the critical thinking part rather than the knowledgeable part of it.

She had her students use the TI-83Plus GC, and instead of constructing graphs [manually], the data were entered and the scales were prepared for the graphic output. The students then analysed the graphs in groups and proceeded to a class discussion.

The students using the TI-83Plus GC also developed a higher level of understanding of the basics, and they constructed ideas to apply knowledge gained from the study of particular models. CT had a positive impact on the students; this technology enabled them to derive the same benefits as Abiola herself (Noss et al., 1990). She felt her students could reap increased benefits because they were introduced to technology [electronic toys] at a younger age. Students were curious about knowing how to use the TI-83Plus GCs and were eager to measure accurately. However, Abiola had a sad feeling about the temporary availability and accessibility of GCs to the students during student teaching.

Abiola and the other PSSM teachers had indicated their willingness to use CT tools as students in the mathematics methods workshop and as facilitators in student teaching. Enthusiastic

about the new task for her as well as her students, here is what Levoli said:

> I did not know much about MT789 or TI-83Plus GC before the technology application course. They were new to me, so the activities that we explored in the classroom were a learning experience for the students and me....Hopefully, the school at which I will be teaching will have computers for every student....I would not mind having a copy of the Math Trek software and at least one TI-83Plus GC so I can utilize it in my class because I really enjoy using CT in my mathematics instruction....It would be good if I had at least one TI-83Plus GC for myself with the view screen panel and I could utilize the overhead projector with it where students can actually visualize some concepts until I can get a class set.

The students' positive reaction to the technology had motivated and inspired Levoli. She saw the benefits of the TI-83Plus GC when her students subsequently became aware, explored, and analysed geometric relationships and made conjectures from patterns.

Supporting CT in the Mathematics Classroom

The schools where the practice sessions were conducted had limited resources for the integration of CT. Four of the five principals accepted and showed interest in supporting their practising teachers with CT integration in mathematics. They gave their verbal support and followed through, giving specific permissions and instructions to guide a smooth process. Levoli's principal granted her permission for the study but he did not show much interest, which subsequently was responsible for greater challenges in arranging access and availability of computers at that school. The PSSM teachers' supervisors from the teacher education institution verified their lesson plans and the teaching strategies used, while the researcher provided the MT789 software and the TI-83Plus GCs.

Generally, in the schools where permission was granted, challenges were often encountered along the chain of administrative command. For

example, at the school where Abiola taught, the computer coordinator was a bit cautious about the usage of the computers because previous students' misuse had damaged a few computers. Therefore, he did not allow her to use the computer laboratory. As a result, Abiola had no other choice than to use the TI-83Plus GC in her teaching practice sessions. At Levoli's teaching practice school, it was challenging to gain support in using the computer laboratory. Scheduling was then a problem, and the lack of support from the principal made it a difficult situation to resolve. The computer coordinators at Sean, Wayne, and Yvon's teaching practice schools gave their support in allowing the software to be installed on the working computers, maintained the computers, and were willing to assist with technical issues.

The cooperating teachers did not place any restrictions on the mode of delivery, but cautioned the teachers to ensure that the material was valid and would not lead the students astray. The cooperating teachers were instrumental in ensuring the good behaviour of the students by periodically checking on them in class and cautioning them to be attentive to the teachers. Yvon had the support of the cooperating teacher at all times in the classroom because he was curious to learn how to use CT along with the students. Sean's cooperating teacher also provided motivational support.

Technical support was also a concern for Levoli, Sean, Wayne, and Yvon. The technician could not get the network connected, and these PSSM teachers had to utilize their expertise in downloading the software on each computer. The constant lack of provision of such expertise to the classroom teachers as Cooper and Bull (1997) and Noss, Hoyles, and Sutherland (1990) reported, could be discouraging in the [general] educational setting. However, these teachers, because of their training and focus in computer studies, had the opportunity to put theory into practice in assisting with such technical issues.

Coping Strategies with Time, Technology, and Classroom Management

The PSSM teachers experienced the management of time as a hindrance to complete class activities, so they had to develop strategies to cope with it. Abiola found that time was consumed quickly because of the students' unfamiliarity with the technology and the time she spent imparting instructions verbally. She opted to give instruction sheets in future lessons. Sean found that preparation of the laboratory or classroom ahead of class time was important to save time in the class sessions. He also realized that time limits had to be set and followed.

Levoli's greatest challenge was the time taken away from her sessions because previous classes did not finish on time; thus she was unable to use the entire class period on the computers. The school-based assessment (SBA) assignment was also a common preference for students using the computer lab for other academic work. Wayne and Yvon found it quite challenging to set up schedules for their teaching practice sessions because they had to negotiate with other teachers to use their laboratory time. Yvon's challenge of not getting the GCs was due to their inappropriateness for use in class activities at the time when the CT tools were available.

Another challenge that occurred, though not often, was with classroom management. Sean found that the students were being inattentive to instructions and exploring on their own before it was time to do so. This made it difficult for the students to draw the graphs on the TI-83Plus GC. He therefore had to spend some [extra] time with them discussing the different icons and demonstrating their functions. To minimize this behaviour, Sean applied the strategy of "demerit" points for not being attentive, and it worked because students did not want to accumulate such points.

The PSSM teachers formed cooperative groups in their sessions to address the lack of experience with computers, the limited number of computers available, and the varying reading capabilities. Continuing to experience the situation of limited financial support in the school system would be frustrating to teachers in future attempts to implement CT. It would not be motivating to teachers who have a vision for school change, and want to be mediators in such innovations.

PSSM Teachers' Suggestions Based on CT Experience

Based on the PSSM teachers' experience, their common recommendations for effective

integration of CT in secondary school mathematics were:

1. CT use in secondary schools is needed because of the learning and teaching benefits for both students and teachers.

2. Teachers need to know how to choose CT tools that are appropriate, current, interactive, and user-friendly in mathematics.

3. Teachers need training in the use of these CT tools.

4. Teachers need professional development for upgrading their content and technological and pedagogical skills.

5. Teachers need to be motivated first with their use of CT in the classroom, so they would be able to stimulate interest, motivation, and improvement in their students' performance.

Wayne's advice to the Minister of Education [a leading reformer in this context] about investigating the availability and accessibility of CT tools for secondary school students came from his observations and research project in his teacher education programme. From his observations, cooperative learning was a workable application to CT integration in mathematics. He also observed that the students' enthusiasm to learn was increased in the setting with CT use. In his research project, Wayne concluded that his observations were contributors to the increased student performance in his project. Based on his experience, he recognized the need for CT implementation in secondary school mathematics. Wayne advocated that there is need for an adequate number of computers and other CT tools to be available and accessible in schools for effective implementation to occur in the education system.

Reflections of the PSSM Teachers' Challenges and Concerns

This study, being one of few that explored a Caribbean perspective, has provided evidence that a Caribbean setting has faced many challenges similar to those faced by developed and developing countries when newly qualified teachers attempted to apply new technologies. The above recommendations from the PSSM teachers are directly aligned with the experiences of earlier researchers in developed and developing countries. As in the cases of Abiola, Levoli, Sean, Wayne, and Yvon, they were motivated to explore the use of CT in their student teaching instructional practices. These new teachers were willing to take risks in exploring with new ideas, teaching and learning strategies, and new technologies. However, the lack of resources, support from principals and other faculty, technical support, and environments that are conducive for teaching and learning during teacher preparation are seen to be prohibitive to the appropriate integration of CT. To encourage new teachers to continue the path to an effective teaching career in the reform of mathematics education in the Caribbean, policy makers need to review the availability, accessibility, and pedagogy of computer technology in the mathematics curriculum.

Notes

1. Individuals' judgements of their capabilities to organize and execute courses of action applied to computer learning.

2. Developing competence with CT use.

3. Managing deeply held internal images that affect change process.

4. Sharing their goals and expectations to develop a common vision for CT use.

5. Builds on developing shared vision and personal mastery through dialogue and discussion.

6. A loop process where there is an interrelatedness of forces when learners reflect and reinforce changes in the overall process of integration.

References

Abramovich, S., & Brown, G. (1996). Integrating problem solving, technology, and the experience of mathematical discovery in teacher education. *Journal of Computers in Mathematics and Science Teaching, 15*(4), 323–338.

Barron, L. C., & Goldman, E. S. (1994). Integrating technology with teacher preparation. In B. Means (Ed.), *Technology and education reform* (pp. 81–110). San Francisco, CA: Jossey-Bass.

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods* (3rd ed.). Boston, MA: Allyn and Bacon.

Blume, G. W. (1991). Preparing mathematics teachers to use computers: Shifting the focus from teaching to learning. *Education, 111* (4), 538–541.

CARICOM Secretariat. (1993). *The future of education in the Caribbean: Report of the Caricom Advisory Task Force on Education*. Georgetown, Guyana: Author.

Cooper, J. M., & Bull, G. L. (1997). Technology and teacher education: Past practice and recommended directions. *Action in Teacher Education, 19*(2), 97–106.

Cousins, J. B., & Ross, J. A. (1993). Improving higher order thinking skills by teaching with the computer: A comparative study. *Journal of Research on Computing in Education, 26*(1), 94–115.

Crossley, M., & Vulliamy, G. (Eds.). (1997). *Qualitative educational research in developing countries: Current perspectives* (Reference Books in International Education; vol. 35). New York: Garland.

Dexter, S. L., Anderson, R. E., & Becker, H. J. (1999). Teachers' views of computers as catalysts for changes in their teaching practice. *Journal of Research on Computing in Education, 31*(3), 221–239.

Erickson, D. R. (1995). *A two-year case study of a sixth-grade teacher of mathematics and her attempt to change her teaching practice* (Doctoral dissertation, Ohio State University, 1995). ProQuest Digital Dissertations, AAC 9505194.

Graham, J. M. (1998). *Elementary inservice and preservice teachers' perceptions of the current mathematics reform movement*. Unpublished doctoral dissertation, OISE, University of Toronto, Canada.

Hazari, S. I. (1991-1992). Faculty computer needs assessment in Third World countries. *Journal of Educational Technology Systems, 20*(4), 321–326.

Hope, W. C. (1997). Resolving teachers' concerns about microcomputer technology. *Computers in the Schools, 13*(3/4), 147–160.

Huerta-Macias, A. (1993). *Current terms in adult ESL literacy* (ERIC Digest ED358750). Washington, DC: ERIC Clearinghouse on Literacy Education. Retrieved December 2006, from http://www.ericdigests.org/1993/terms.htm.

Junor, P.A. (2003). *Preservice secondary school mathematics (PSSM) teachers exploring the integration of computer technology in their instructional practices: A Caribbean perspective*. (Doctoral dissertation, OISE, University of Toronto, 2003). ProQuest Digital Dissertation, AAT NQ78327.

Junor Clarke, P. A. (2007). Exploring the use of computer technology in a Caribbean context: Views of pre-service teachers. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT), 3*(1), 23–38.

Larson, A. (1995, November). *Technology education in teacher preparation: Perspectives from a teacher education* program. Paper presented at the annual meeting of the American Educational Studies Association, Cleveland, OH. Retrieved September, 2000, from http://www.ed.uiuc.edu/projects/tta/conferences/AESA-95.html

Miller, E. (1996). *Partnership for change: Using computers to improve instruction in Jamaica's schools.* (Technical Paper for Latin America and the Caribbean; Education Policy in Latin America and the Caribbean; No. 2). Washington: DC: Agency for International Development.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.

Norvak, D. I., & Berger, C. F. (1991). Integrating technology into preservice education: Michigan's response. *Computers in the Schools, 8*(1–3), 89–101.

Noss, R., Hoyles, C., & Sutherland, R. (1990). Teachers' characteristics and attitudes as mediating variables in computer-based mathematics learning. In G. Booker, P. Cobb, & T. de Mendicuti (Eds.), *Proceedings of the Fourteenth Annual Conference of the International Group for the Psychology of Mathematics Education (PME 14)*, Mexico (vol. 1, pp. 175–182). Mexico: Organizing Committee.

Oliveira, J. B. A. E. (1989). Computer education in developing countries: Facing hard choices. *Education and Computing, 4*(4), 301–311.

Ropp, M. M. (1999). Exploring individual characteristics associated with learning to use computers in preservice teacher preparation. *Journal of Research on Computing in Education, 31*(4), 402–424.

Sandholtz, J. H., Ringstaff, C., & Dwyer, D. C. (1992). Teaching in high-tech environments: Classroom management revisited. *Journal of Educational Computing Research, 8*(4), 479–505.

Scheffler, F. L., & Logan, J. P. (1999). Computer technology in schools: What teachers should know and be able to do. *Journal of Research on Computing in Education, 31*(3), 305–326.

Senge, P. (1990). T*he fifth discipline: The art and practice of the learning organization*. New York: Doubleday/Currency Publishing.

Tharp, M. L., Fitzsimmons, J. A., & Ayers, R. L. B. (1997). Negotiating a technological shift: Teacher perception of the implementation of graphing calculators. J*ournal of Computers in Mathematics and Science Teaching, 16*(4), 551–575.

Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.

Classroom Research:
A Defining Feature of Professional Practice

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Abstract. Classroom research, teaching, and professional development are closely linked. Their interrelation and interconnectedness may be described as axiomatic. In addressing the question: Why classroom research by teachers?, a range of issues emerges from topics such as classroom practice, social context, curriculum knowledge, professional learning, and the usefulness of research. This paper urges that teachers who are committed to their own professional practice seek to expand their knowledge and adapt their teaching to educationally sound delivery, arising from authentic classroom research. In the Caribbean, the teacher's claim to professionalism sometimes falters in this regard. A significant issue is that teachers need to be increasingly effective in enabling culturally diverse groups of students to learn increasingly complex subjects. This includes aspects of pedagogical content knowledge that incorporate culture and community contexts for learning. Simultaneously, teachers ought to reflect on their practice to learn from and improve upon it continually. This paper focuses on three themes that explore the concept of classroom research by teachers. The first establishes the link between classroom research and the teacher professional. The second evaluates curriculum and the teaching/learning process as the focus of classroom research, and the third discusses problems in the traditional research paradigm for guiding teachers to improve their teaching. The paper concludes with a reflection on the nature of classroom research itself and its relevance for teachers' professional development within the Caribbean context.

Classroom Research and the Teacher Professional

Classroom research may be described as ongoing and cumulative intellectual inquiry by classroom teachers into the nature of teaching and learning in their own classrooms. Inquiry into a question about how students learn usually leads to new questions and obviously to continual investigations through classroom research (Cross & Steadman, 1996).

K. Patricia Cross raised the issue that research has failed in respect of attention to actual classrooms. She reinforced the point that teaching and learning reforms could only occur if they are based on concrete classroom situations (cited in Lazeron, Wagener, & Shumanis, 2000).

In my view, the purpose of classroom research is to provide a rich context to comprehend the complexities in a classroom and to make a distinct connection between research and practice. This signifies that classroom research is really utilitarian inquiry applied to action to determine if it is worthwhile.

In fact, the term "action research" is sometimes used interchangeably with classroom research. McLean (1995) defined action research as "the process of systematically evaluating the consequences of educational decisions and adjusting practice to maximize effectiveness" (p. 3). This involves teachers delineating their teaching strategies, identifying their potential outcomes, and observing whether these outcomes do in fact occur. According to Mills (2000), action research is really examining one's own practice and assessing how well students learn.

In addition, action research is seen as a form of inquiry that requires teachers to engage in a cycle of questioning, planning, acting, observing, reflecting, pre-planning, and, frequently, questioning further (Kemmis & McTaggart, 1988). Studies have found that participation in action research revitalizes teacher practice and motivates teachers by improving their self-confidence as professionals (Lomax & Evans, 1995). Also, case studies involving pre-service teachers and their cooperating teachers have provided strong evidence to support collaborative research as a professional development tool (Levin & Rock, 2003). Interpreting the literature, action research really looks to teachers as being engaged in

scholarship with a research-based curriculum at centre stage for professional practice.

There are many definitions of professional practice. However, I believe that key dimensions common to all definitions are as follows: a code of conduct, specialized knowledge, teacher research, an emphasis on continued learning, and the rendering of community service.

Therefore, for teachers to assume the mantle of professionalism, they first need to understand the moral implications of their chosen profession. Secondly, teachers need to develop a commitment to become producers of knowledge in their areas of specialization. Thirdly, teachers need to enquire into their own practice through research; and, finally, they must find ways of improving and developing that practice. Professional development will provide for the application of information and knowledge in rendering community service.

In this context, teachers need to know that one cannot become a teacher professional without engaging in classroom research in order to improve one's practice.

Curriculum, the Teaching/Learning Process, and Classroom Research

Given that research is more in conformity with a conception of teaching as a profession, naturally, the second premise is that "curriculum development" and "curriculum knowledge" should be based upon action research in real classroom contexts. According to Hopkins (2002), the claim of teaching to be a profession lies in the ability and opportunity for teachers to exercise their professional judgement over the pertinent tasks involved in their role, namely, curriculum and teaching. For teachers, then, the path to professional practice involves reconceptualizing curriculum as curriculum research and the linking of curriculum knowledge to the art of teaching in classrooms. Both teachers and students are participants in the learning process.

Darling-Hammond and McLaughlin (1995) identified key features of a model in which teachers confront research and theory directly and often evaluate their practice. These features are described as follows:

- Experiential—engaging teachers in concrete tasks of teaching, assessment, and observation, which illuminate the processes of learning and development
- Collaborative—involving a sharing of knowledge among educators
- Connected to and derived from teachers' work with their students as well as to examinations of subject matter and teacher methods
- Sustained and intensive—supported by modelling, coaching, and problem solving around specific problems of practice

Clearly, these approaches to action research and practice are also recognized as teacher professional development strategies that result in improving teaching.

Apart from these empowering aspects of action research, it is necessary to address an important concern applicable to the context of this paper. Experiential knowledge gained through linking research to practice allows teachers to view the world from multiple perspectives, and to utilize this knowledge to accommodate diverse learners. Delpit (1995) explicitly stated that: "we all interpret behaviours, information, and situations through our own cultural lenses; these lenses operate involuntarily, below the level of conscious awareness, making it seem that our view is simply the way it is" (p. 51). Teachers who understand the value of democratic education develop an awareness of their beliefs and avoid a "communicentric bias" (Gordon, Miller, & Rollock, 1990) that limits their understanding of students belonging to diverse groups as well as the teaching of complex subject matter.

It is imperative that these elements become part of a seamless process of professional learning that commences in pre-service education, continues through the initial years of induction, and extends through years of developing accomplished practice.

The ideal is that curricular specification should feed teachers' research and development programmes, through which they can progressively increase their understanding of their own work and become better practitioners. It is at this point that teaching becomes a profession.

It is important that teachers be involved in classroom action research, because without their

involvement aspects of the traditional approaches may persist in classrooms.

Problems in Traditional Research Approaches

In the 1980s, the teacher research movement gained momentum; however, McNiff (1993) noted that two aspects prevailed. Firstly, the nature of research was still grounded in method—how classrooms should be run. Secondly, the form of this method was still arranged by external agents. Given that the research in question pertained to the activities of individual teachers and was done by those individual teachers, on the other hand, the status of research was still derivative (controlled externally). Here, McKernan's (1991) critical perspective that "too often practitioners are treated as the objects of inquiry; the 'researched' by external 'researchers'" (p. 36) is accepted.

There is a general agreement that the most unfortunate aspect of traditional educational research is that it is quite difficult to apply its findings to classroom practice. Most of this research construes teaching from a theoretical perspective that is incompatible with the perspectives that teachers must adopt in thinking about their work. This suggests that researchers and school teachers conceptualize the teaching/learning process differently. One must recognize that from the perspective of some teacher researchers, theory is no longer what "they" do at the university, but becomes what "we" do in our classrooms every day.

The crux of the matter is that the traditional approach to classroom research is still prevalent. On a daily basis, a majority of teachers design curriculum, select instructional strategies, grade assignments, and develop activities and interventions. Nevertheless, teachers frequently perform these tasks intuitively or by non-testable methods, instead of systematically analysing student outcomes to determine the next stage in the curriculum and instructional process. Castle and Watts (1992, p. 2) emphatically stated that:

> The traditional view of teachers' work is governed by the idea that time with students is of singular value, that teachers are primarily deliverers of content, that curricular planning and decision making

rest at higher levels of authority, and that professional development is unrelated to improved instruction. (as cited in Cook & Fine, 1997).

Learning about and engaging in action research would allow teachers to shift from traditional classroom practice to collaborative research that could solve the immediate and day-to-day problems in classrooms.

When teachers work together to address the problems they seek solutions for, implement problem-solving actions, and study the impact of these actions in their classrooms, they are empowered to become professionals in their own right. As John Field (2005) believes, we must try to find out for ourselves what works for us and what does not. Classroom research is an empowering process that liberates teachers from the prescriptions of others.

Classroom Research in the Caribbean Context

To summarize, I have supported the need for classroom research by teachers on three grounds: (a) its role in defining the teacher as a professional, (b) its focus on key professional practice of teachers, and (c) the inadequacy of traditional approaches for teachers.

However, there are further issues on which to reflect, such as the nature of classroom/action research itself, and its relevance for teachers' professional development in the Caribbean.

The Nature of Classroom Research

Classroom/action research aims at informing the practical judgement of actors in problematic situations. The validity of the concepts, models, and findings it produces depends to a limited extent on scientific tests of truth; instead, more emphasis is given to their utility in assisting practitioners to act more skilfully and effectively. Of major significance is the fact that theories are not validated independently and then applied to curriculum; they are only validated through practice. Action research is therefore proactive, and to some extent may be described as communal activity that necessitates and promotes reflective practice on the part of its practitioners (Clift,

Houston, & Pugach, 1990).

Lytle and Cochran-Smith (1992) explained that such an approach to research inevitably accommodates epistemological and political differences from traditional practice. As a means of acquiring knowledge they believe that research has:

> the potential to alter profoundly the cultures of teaching – how teachers work with their students toward a more critical and democratic pedagogy, how they build intellectual communities of colleagues who are both educators and activists, and how they position themselves in relationship to school administrators, and university-based experts as agents of systemic change. (p. 470)

Interestingly, this approach to research facilitates a common meeting ground for classroom teachers to interact with school-based and university-based colleagues. Such a meeting ground, though difficult to achieve, is of tremendous value for teacher professional development and the school reform movement in the Caribbean.

The Relevance of Classroom Research for Professional Development of Teachers in the Caribbean

With the advent of the 21st century, several Caribbean countries inaugurated task forces, working groups, or project teams, which all engaged in meaningful consultation with teachers, school administrators, university professors, and various stakeholders in the education sector. Almost all the strategies or projects emanating from these ventures identified teachers as instrumental to the reform of the education sector, more specifically, the academic and professional knowledge of teachers (Miller, 1999).

A significant lesson learned in the past decade of school reform efforts is that far more time is required for teachers to develop research knowledge than is now available. It is not only necessary for teachers to study, implement, and evaluate learner outcomes, but they must also be able to effect meaningful, engaged learning (cognitively, socially, and culturally) within the Caribbean context. In particular, teachers need to confront the challenge of working with culturally diverse groups of students learning a variety of increasingly complex subjects, This points to careful selection of pedagogical content knowledge that incorporates culture and community contexts for learning. By all means, teachers need more time for collaborative action research to develop, master, and reflect on new approaches to work with children.

Technology integration in schools is one example through which more time can be devoted to classroom research. In the Caribbean, substantial investment in educational technology has led to a marked increase in the numbers of computers in schools, many of which include multimedia and Internet capabilities. Technologies can support and extend professional learning communities and assist teachers in making better use of their time via a range of technologies; for example, through the Internet and video- and audio-conferencing, teachers can gain access to instructional resources and collegial networks. Through electronic mail, teachers can share and solve problems with colleagues at any time. Furthermore, with the onset of the computer age, a vast store of knowledge is available to many students via the Internet in their homes. This can allow teachers to establish a level of classroom knowledge that fits within the new learning framework. Teachers can also develop innovative uses of technology to enhance student and teacher learning.

Within our Caribbean educational context, teacher training and in-service programmes must set objectives to initiate teachers into the basic skills and attitudes necessary to carry out classroom research.

In the Caribbean, many teachers do not venture into classroom research. Some of them may not even know about the relevance of engaging in such research. Hence, it is incumbent on all teacher researchers to open up their research to critique and, if possible, to publish it. The availability of an accessible and publicized archive of informative classroom research will provide scaffolding for the development of research-based practice for those teachers who are not currently involved. Teacher researchers also need a forum whereby they can share their findings on problems encountered in their daily practice, reflect upon what they have discovered, and suggest ways in

which classroom research can influence and enhance the professional development of teachers throughout the region.

The Bachelor of Education programme offered at The University of Trinidad and Tobago has been developed around a core of teacher research. The programme also caters for a specific course in action research, through which student-teachers can receive training in inquiry to become problem solvers in classrooms. In addition, through an Observation Practicum Course, student-teachers visited schools across Trinidad and Tobago. They were able to develop new understandings of themselves as prospective teacher-researchers, and of the attributes that characterize commitment to innovation and development in curriculum and teaching. The long-term goal of their professional development over a career of teaching is most likely to be achieved where schools promote continuous learning for teachers through ongoing professional activities, and make schools and classrooms the centres of inquiry. Schools will also have to see them as teacher professionals who ought to perform their "service" function in communities and society at large.

Conclusion

Notwithstanding the positive contributions that teacher research has made to improved teaching and learning in classrooms and the professional development of teachers in the Caribbean over the years, the imperatives of the 21st century demand fresh responses and a new approach.

Teachers must participate in pre-service and in-service training that would help them in action research. Furthermore, teacher dialogue with university professors, academic researchers, and curriculum developers, as well as their collaboration with parents and community members, is necessary to acquire what might be deemed professional knowledge. The intention is that the reconceptualization of curriculum as curriculum research and the linking of curriculum knowledge to the art of teaching essentially rest with the practice and professional development of teachers. Curriculum development should not be subject to interpretations made by "outside experts" with the exclusion of teacher input based on collaborative classroom research.

On a broader level, we should work to restructure professional development systems by creating "a community of teacher-researchers" within and among schools across the Caribbean region. Regional pooling and teacher research cooperation will become mandatory for an exchange of professional ideas on certain themes, for example, research knowledge to work with culturally diverse groups of students; technology integration in schools through which more time can be devoted to classroom research; the development of a teacher research archive; university training for the "teacher as a researcher"; the need for the teacher professional to engage in community service; and, finally, other measures to promote teacher professional development.

The Caribbean region requires professional development of the teaching fraternity to implement school reform and school improvement. Each country can set forth a visionary scenario, compile the best theoretical research about how students learn, recommend new textbooks and assessment procedures, suggest innovative teaching/learning strategies, and transform all the other elements involved in systematic reform. But unless the classroom teacher understands and is committed to research, the goal of school reform may be difficult to achieve.

References

Clift, R. T., Houston, W. R., & Pugach, M. C. (Eds.). (1990). *Encouraging reflective practice in education: An analysis of issues and programs.* New York: Teachers College Press.

Cook, C. J., & Fine, C. (1997). *Critical issue: Finding time for professional development.* Retrieved from http://www.necrel.org/sdrs/areas/issues/educatrs/prof devel/pd300.htm

Cross, K. P., & Steadman, M. H. (1996). *Classroom research: Implementing the scholarship of teaching.* San Francisco, CA: Jossey Bass.

Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan, 76*(8), 597–604.

Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom.* New York: New Press.

Field, J. (2005). *Why classroom research.* Retrieved from http://www.iatefl.org/content/newsletter/ 185.php

Gordon, E. W., Miller, F., & Rollock. D. (1990). Coping with communicentric bias in knowledge production in the social sciences. *Educational Researcher, 19*(3), 14–19.

Hopkins, D. (2002). *A teacher's guide to classroom research*. Buckingham, UK: Open University Press.

Kemmis, S., & McTaggart, R. (1988). *The action research planner* (3rd ed.). Geelong, Victoria: Deaking University Press.

Lazerson, M., Wagener, U., & Shumanis, N. (2000). Teaching and learning in higher education. *Change 32*(3), 13–19.

Levin, B. B., & Rock, T. C. (2003). The effects of collaborative action research on preservice and experienced teacher partners in professional development schools. *Journal of Teacher Education, 54*(2), 135–149.

Lomax, P., & Evans, M. (1995, April). *Working in partnership to implement teacher research*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Lytle, S. L., & Cochran-Smith, M. (1992). Teacher research as a way of knowing. *Harvard Educational Review, 62*(4), 447–474.

McKernan, J. (1991). *Curriculum action research. A handbook of methods and resources for the reflective practitioner*. London: Kogan Page.

McLean, J. E. (1995). *Improving education through action research: A guide for administrators and teachers*. Thousand Oaks, CA: Corwin Press.

McNiff, J. (1993). *Teaching as learning. An action research approach.* London: Routledge.

Miller, E. (1999). *Teacher development in the Caribbean*. Available at http://www.oecs.org/oeru/documents/Teacher%20Dev.%20Final.pdf

Mills, G. E. (2000). *Action research: A guide for the teacher researcher*. New Jersey: Merrill.

Poster Presentations

Biodiversity Education in Teachers' Colleges in Jamaica: Implementing Theme-Based Learning and Action Projects

Marceline Collins-Figueroa
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Abstract. The Institute of Education, Joint Board of Teacher Education, Jamaica, in collaboration with the Jamaica Environment Trust, is implementing biodiversity education (BE) in teachers' colleges with funding from the Environmental Foundation of Jamaica. Using a conceptual framework that includes the importance and status of biodiversity and how to protect it, lecturers are exploring participatory, constructivist approaches while integrating BE across disciplines. Student teachers are engaged in action projects while developing knowledge, skills, attitudes, and responsibility on themes such as vegetable gardening, biodiversity in the schoolyard, medicinal and culinary herbs, ferns, and birds. This poster summarizes project objectives, activities, successes, and challenges.

Whole College Approaches to Sustainability in Teacher Education in Jamaica

Marceline Collins-Figueroa
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Abstract. Two teachers' colleges in Jamaica have piloted whole college approaches to environmental education for sustainable development. Recently, these colleges demonstrated how to reorient teacher education to address sustainability through a variety of strategies including: (a) curriculum revision that infuses ecological, social, and economic concerns, and new courses on sustainable development; (b) institutional transformation that involves shared visions, missions, decision making, and commitment of all sectors of the colleges with respect to stewardship of resources and sociocultural institutional practices and policies; (c) professional development that aims to build knowledge, skills, and competencies for improved teaching and learning approaches, and capacity for developing change agents with an ethic of sustainability; (d) development of strategies for research, monitoring, and evaluation of whole college programmes; and (e) forming partnerships with external organizations and communities that facilitate financial and technical support and collaboration for planning and implementation of activities aimed at moving the institutions towards sustainability. The poster summarizes the changing practices and tensions within the college communities. It identifies success factors that influence how teacher education is being reoriented towards sustainability in Jamaica.

Preparing High Quality Mathematics Teachers: A Collaborative Approach to Teacher Development

Pier A. Junor Clarke, Thomas McPherson-Kerr, & *Denise Brewley-Corbin*
Georgia State University, Atlanta, GA

Abstract. This presentation discusses the development process for a proposed project in an English-speaking Caribbean country. The project extended over a three-year period with a Caribbean educator in the United States working collaboratively with teacher educators from the host Caribbean country. Teacher educators expressed the perception that the high-quality mathematics required to equip young people for the growing community of rapid expansion in

science and technology was not evident in many of their classrooms. The collaborators developed the project to implement a pedagogical model, The Reflective Teaching Model, to address the teaching on student achievement. The proposed project is guided by a conceptual framework based on the theories of constructivism and metacognition. In its design, the following constraints will be addressed: (1) Information and Communication Technology (ICT) to enhance teaching and learning; (2) resources to initiate reforms and to sustain successful initiatives and limited opportunities for teachers to utilize new and creative paradigms for teaching and learning mathematics; and (3) the availability of funds and training to engage in evaluation and research that can help create opportunities for these educators to share lessons learned and experiences gained.

A Bibliographic Evaluation of the Research of Graduates over the Last Ten Years at the School of Education, UWI, Mona

Dorothy M. Palmer
The University of the West Indies, Mona, Jamaica

Abstract. The Government of Jamaica, in its *White Paper on Education,* states that each person should have access to libraries and other instructional services, which will provide the necessary technological skills to facilitate lifelong learning, so that persons can operate and function effectively in this global environment. In 2003, a Task Force on Education was established to look at ways in which the education system could be transformed. A critical aspect of any educational system is the research undertaken so that policy makers and other stakeholders can make informed decisions. The Ministry of Education, Youth and Culture personnel met with the members of the School of Education and, while pinpointing the areas of research covered by staff and graduate students, identified research priorities in education to be undertaken. The paper presents a bibliographic evaluation of the research that has been undertaken by graduates over the past 10 years.

Measuring the Effects of Socio-Cultural Factors in a Jamaican Chemistry Classroom - Findings From the Pilot Study

Norda Stephenson
The University of the West Indies, Mona, Jamaica

Abstract. In the Caribbean, the general underperformance of chemistry students, particularly in external examinations, has been a troubling issue for educators, policy makers, curriculum developers, parents, and students alike. Evidence points to a direct relationship between performance or learning outcome, and the teaching/learning environment of the school. However, in spite of a renewed focus and attention on classroom variables, sociocultural aspects of the classroom environment have not received very much attention. This study seeks to investigate and measure the effects of authoritarianism, goal structure, societal expectation, sacredness of science, Jamaican world-view, and language in chemistry classrooms. A modified Socio-Cultural Environmental Scale (SCES) was used to gather preliminary data in the study. The discussion of the findings of the study will focus on (a) identification of the sociocultural factors that impact most significantly on the learning outcome, and (b) evaluation of the degree of significance of each factor on the learning outcome. The findings will assist teachers in implementing appropriate intervention strategies that will help improve students' performance.

Notes on Contributors

Keynote Speaker

Theodore Lewis is Professor, Department of Human Resource Education, College of Education and Human Development, University of Minnesota. He is a graduate of Mausica Teachers College (1967–1969). He has published numerous articles on vocational and technology education curricula. He is past editor of the Career and Technical Education Research (CTER) journal, and Past-President of the Association of *Career and Technical Education Research* (ACTER). Recent publications (2007) include "Braverman, Foucault and the labor process: framing the current high-skills debate," *Journal of Education and Work*, *20*(5); "Engineering education in schools," *International Journal of Engineering Education*, *23*(5): "Social inequality in education: A constraint on an American High Skills," *Curriculum Inquiry*, *37*(4); and in 2005: "At the Interface of School and Work," *Journal of Philosophy of Education, 39*(3). He has recently accepted a position as Professor at the University of Trinidad and Tobago (UTT).

Presenters

Ruth Albornoz graduated as a Licenciada en Educación Mención Inglés from the Universidad de Oriente in Venezuela. Between 1997 and 2001, she worked as a Lecturer (English) at the Socio-Humanities Department in the English Coordination, Universidad de Oriente, Venezuela. Following this, she undertook postgraduate studies at The University of the West Indies (UWI), St. Augustine, while working as a Research Assistant and Spanish Instructor at the Centre for Language Learning (CLL). At present, she works as a Spanish Instructor in the Spanish programme of the School for Studies in Learning Cognition and Education at the University of Trinidad and Tobago (UTT), Valsayn Campus. Her main interests are the research of the implementation of Spanish as a Second Language in the Caribbean context (mainly in Trinidad and Tobago) and its development; the attitude of young students towards the language, and how the new technology can be used in the educational field.

Lennise Baptiste has worked in the field of education for more than 20 years. At present, she is completing her Ph.D. in Evaluation and Measurement at Kent State University, Ohio, USA. Her work experience includes the positions of teacher, curriculum facilitator, principal in Trinidad and Tobago, and Measurement and Testing Officer with the Caribbean Examinations Council (CXC) in Barbados. She is currently attached to the Bureau of Research Training and Services at Kent State, which provides services in programme evaluation, research design, assessment, and quantitative and qualitative data analysis. The thread through her academic work has been managing subjectivity in the evaluation process but she has special interest in evaluation of the arts.

Tony Bastick holds a Ph.D. in Education and Psychology from Brunel University of West London. Over the last 30 years, he has held substantive positions in universities in the US, South Pacific, UK, Australia, Asia, and the Caribbean. These transnational and intercultural experiences have helped to enrich the original perspectives he brings to his research in assessment and evaluation and to his education consultancies in developing countries. He has published over 50 research papers and books, and his work is cited in hundreds of international research publications in more than 10 languages. Since 1997, he has been with The University of the West Indies (UWI) at both the Mona and St. Augustine campuses.

Antoine Beauchemin is currently pursuing an M.A. in Community Counseling at Kent State University and writing a thesis examining the relationship between youth obesity and family eating habits. He obtained his B.Sc. in Psychology from McGill University in 2005. He is an evaluation associate at Kent State University's Bureau of Research Training and Services, where he performs survey design, data collection through observation and focus groups, qualitative and quantitative data analysis, and evaluation reports for various local and national educational programmes.

Camille Bell-Hutchinson has been a mathematics educator for over 30 years in Jamaica. She was a secondary school teacher of mathematics, and was also Lecturer in Mathematics Education and Coordinator of the Science and Mathematics Education Centre in the School of Education at The University of the West Indies (UWI), Mona Campus. She has been involved in various consultancies in the Caribbean region and is a past Chief Examiner of the Caribbean Secondary Education Certificate (CSEC) Mathematics and member of the Caribbean Advanced Proficiency Examination (CAPE) Mathematics Panel. Dr. Bell-Hutchinson is the writer of the national Mathematics and Numeracy Policy in Jamaica and currently chairs the Mathematics Sub-Committee of the Education Transformation Team of the Ministry of Education there. She was recently appointed Campus Registrar of the UWI, Mona Campus, but continues to contribute to mathematics education both locally and regionally.

Stacey Blackman is a lecturer in Special Education and Co-ordinator of the Associate Degree Teacher Education Programme at the School of Education, The University of the West Indies (UWI), Cave Hill. Her research interests are: Specific Learning Disabilities (Dyslexia), pupil perspective research, and non-communicable diseases (diabetes mellitus, asthma) and their influences on children and adolescents at school. She is currently involved in a comparative education research project that looks at the views of primary school children in the Caribbean and Scotland on the management and control of diabetes mellitus.

Joan Bobb-Alleyne-Dann became the Coordinator of The University of the West Indies (UWI) School of Continuing Studies in Tobago in October 2007 after 33 years in the teaching profession. She spent 15 years as a general education teacher in the primary school system before moving into special education as Teacher-in-Charge and, later, Principal of the Tobago School for the Deaf, Speech and Language Impaired. She holds an M.Ed. (Youth Guidance) from UWI, and is currently pursuing an upgrade from M.Phil. to Ph.D. in Educational Administration at UWI, St. Augustine.

Béatrice Boufoy-Bastick lectures in French at The University of the West Indies (UWI), St. Augustine. She has wide cross-cultural experience of teaching and researching in Europe, Australia, Asia, the South Pacific, and the Caribbean. Dr. Boufoy-Bastick's main research interests are in the interaction of culture and second language learning, language policies, and in the development of innovative language teaching methods.

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Beverly-Anne Carter holds a Ph.D. from The University of the West Indies (UWI). She was appointed Director of the Centre for Language Learning (CLL) at UWI, St. Augustine, in 2006. Dr. Carter has taught French in the undergraduate degree programme and to the Centre's non-specialist learners, and TESOL methodology to graduate students. She researches and has published in the areas of foreign language pedagogy and methodology, learner autonomy in language learning, and language policy and planning.

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María Pilar Gea Monera has worked in the field of language teaching for more than 10 years. At present, she is working as a lecturer and coordinator for the Spanish Programme at the Centre for Language Learning (CLL), The University of the West Indies (UWI), St. Augustine. She did her B.A. and Diploma in Education at the University of Murcia, Spain, and her M.A. at the University of Hull, UK. She is currently doing research on exploring new ways of introducing grammar in the Spanish as a Foreign Language classroom.

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Arthur Joseph has been engaged in the educational sector for 40 years, and has taught at all levels of the educational system except the early childhood level. Mr. Joseph spent 25 years as a mathematics teacher at the secondary level, and is currently a lecturer at the School of Education, The University of the West Indies (UWI), St. Augustine, where he lectures in Educational Administration at the undergraduate and postgraduate levels. He has done extensive work in

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Pier A. Junor Clarke holds a Ph.D. from the University of Toronto. She has taught K-16 in urban schools and communities within the Caribbean, USA, and Canada, and is currently in Year-4 of teaching in higher education. A major area of focus for Dr. Clarke is teacher quality in mathematics education. Her research focus is in teacher education, exploring the effects of: (a) technology integration in mathematics instructional practices; (b) the Reflective Teaching Model—a pedagogical model in preparing high quality mathematics teachers for urban schools; and (c) collaboration in professional learning communities as an instrument in teacher development.

Michael Kallon is a Serra Leonean who holds a Ph.D. from the Ontario Institute for Studies in Education, University of Toronto. He is currently a Research Fellow in the School of Education, The University of the West Indies (UWI), St. Augustine. His research interests include curriculum reform and innovation. More recently, his interest has broadened to include multicultural and anti-racism education.

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Yvonne Lewis is Director of the Division of Educational Research & Evaluation, Ministry of Education, Trinidad and Tobago. She oversees the assessment and evaluation departments of the Division, and has led most of the recent advances in this key Division, including the implementation of national assessments of educational achievement at the primary and secondary levels.

Esperanza Luengo-Cevera holds a degree in Philology from the University of Valencia. She has taught languages in Spain, Scotland, and the USA. For the past seven years, she has taught at The University of the West Indies (UWI), St. Augustine and, most recently, at the University of Trinidad and Tobago (UTT). Her research interest is in second language acquisition methodology, and she is currently working on the integration of ICT in the foreign language classroom.

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