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GENDER ISSUES IN EDUCATION AND INTERVENTION STRATEGIES TO INCREASE PARTICIPATION OF BOYS

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EXECUTIVE SUMMARY

Background

There is growing concern worldwide about the level of achievement of boys. There is much research published on the gender gap in educational achievement in which girls seem to be out-performing boys. It was against this backdrop that this consultancy was conducted.

The overall purpose of the consultancy was interpreted to be the generation of strategies to correct the perceived underperformance of boys in the school system in Trinidad and Tobago, particularly at the primary level. Such strategies were to be arrived at after certain preliminary work had been undertaken, viz:

- A review of pertinent literature and pertinent government policy documents
- A statistical analysis of the performance of boys throughout the primary, secondary and tertiary levels, with information on the early childhood sector provided where available
- An analysis of steps that are being taken in some schools to deal with the issue
- An analysis of Ministry of Education curricula and testing materials for gender bias with respect to boys'/girls' achievement
- An analysis of the level of implementation in schools of relevant strategies as outlined in government documents
- Consultation with significant stakeholders

Further, the terms of the consultancy stipulated that recommendations were to be made for appropriate library resources and appropriate teacher professional development programmes that could assist in achieving the goal of enhanced performance levels by boys.

After consultation with the Ministry of Education, it was decided that the project would be scaled down to focus mainly on the primary sector.

The research was conducted in stages as follows:

- Review of the Literature
- Review of Reports
- Statistical Analysis of Examination Results
- Field Work and Analysis of Data
- Content Analysis of Curriculum and Assessment Instruments
- Toolkit

Literature Review

A number of library catalogues, online databases, and official and organizational websites were searched with the following keywords (both individually and in appropriate combinations): “primary school students,” “primary education,” “elementary education,” “secondary school students,” “secondary education,” “high school students,” “gender and education,” “male underachievement,” “academic achievement,” “sex differences,” “boys,” “male students,” and “interventions.”

The review of the literature demonstrated the complexity of the debate surrounding the problem of male underachievement. There are equally strong voices for and against the idea of treating it as problematic, with some believing that the moral panic engendered by the media, politicians, and some educational professionals has led to excessive attention being paid to the phenomenon. On the other hand, there are others who believe that there is a serious threat posed to the stability of the society if the problem of underachieving boys is not addressed in a timely manner.

There are certain issues emerging from the debate that need to be taken on board in any attempt to address the problem at the local level. A major issue is the question of “which boys.” There appears to be compelling evidence that it is not all boys who are underachieving and not all girls who are achieving. It would therefore be prudent to identify the boys and girls who are experiencing problems and ensure that their needs are addressed by any interventions that are implemented. In this respect, it would also be useful to widen the debate from the focus on gender to examine the ways in which race, class, and other socio-economic factors are impacting on achievement. This review has identified a number of recommendations in the literature for addressing the problem of male underachievement; however, it would be strongly recommended that in attempting to address the problem, special attention be paid to the recommendation by Francis (2000), that is, to ensure that programmes to raise achievement seek to do so for all students, rather than simply focusing on boys.

Review of Reports

A survey of 39 policy documents and reports issued by the Ministry of Education (MOE) and other key stakeholder agencies was undertaken, which resulted in the identification of several findings and recommendations related to male underachievement in education. Younger and Warrington’s (2005) system for the classification of strategies that can be employed to mitigate male underachievement in school was adapted and augmented to create broad rubrics under which relevant recommendations from these documents and reports could be subsumed. Younger and Warrington identified four categories: pedagogic, individual, organizational, and socio-cultural. Two more have been added—policy direction, and resource allocation and training imperatives. These six categories are not conceptualized as being entirely self-contained, but rather provide a useful framework to organize approaches for addressing male academic underachievement.

Most of the major policy documents issued by the MOE and other ministries and government agencies concerned with the education and training of the children and young people of Trinidad and Tobago explicitly address the rights of all children, regardless of gender, class, race, ethnicity, religion, disability, geographical location, or socio-economic background to an education that will develop their potential to the fullest (*Education Policy Paper*, 1994; *National Report on the Development of Education*, 2008; *National Youth Policy*, 2005; *Standards and Guidelines for the Operation of All Schools*, 2007). However, there is recognition that there are gender differentials in achievement. In order to achieve gender equity, it is recognized that “curriculum content, instructional processes and materials, and students’ choices must be gender fair,” and that “teachers must be educated towards this end of achieving a gender-fair curriculum” (*Education Policy Paper*, 1994, p. 40).

The major focus of the documents and reports reviewed with respect to resource allocation is in the area of provision of quality teachers. Another area that has been identified for attention is the area of research. Training is yet another vital area that has been addressed in the documents. Concern has been expressed about the need for preparing teachers to deal with issues of gender in the delivery of education.

In recognizing the need for equitable opportunities for learning for both genders, the documents highlight the role of teachers with respect to the adoption of student-centred teaching strategies that cater to the diverse needs of learners (*Draft Inclusive Education Policy*, 2008; *Draft White Paper on Standards and Guidelines*, 2007; *National Policy on Child Care*, 2005). It was very striking that, despite the concern articulated in most of these documents for the provision of opportunities to all learners to ensure that they developed their skills and abilities to the fullest, the only reference to support at the individual level noted in the documents was the suggestion in the *National Youth Policy* for the establishment of a mentoring programme in schools and youth organizations (2005, p. 53). On the other hand, there was much more concern with support at the organizational level. The documents showed little appreciation for the value of creating appropriate environments for learning.

In summary, the review sought to identify specific policy measures to address the problem of male underachievement. It was encouraging to note that the policies seemed to reflect the need to ensure the learning of all students, regardless of gender. All the reports examined spoke generally to the need for equal opportunity for all students regardless of origin or background, and even when gender was specifically identified, it was generally within the framework of ensuring equal opportunities for all students. It should be noted that the problem of gender balance in the teaching force appeared to be an area of concern for policymakers.

Statistical Analysis of Examination Results

A detailed view of the context of this study was obtained through a critical analysis of the performance of students at the terminal primary school examination, the Secondary Entrance Assessment (SEA), and also in selected subjects at the Caribbean Secondary Education Certificate (CSEC) which is administered by the Caribbean Examinations Council (CXC). The objectives of this part of the study were as follows:

Secondary Entrance Assessment

- To examine the performance levels of males and females in the SEA over the period 2004-2008
- To examine the gender composition of the top performing group of students in the SEA over this period
- To examine the gender composition of the lowest performing group of students during this period
- To identify which males are performing at a low level

Caribbean Secondary Education Certificate

- To examine the performance levels of males and females in the CSEC Mathematics, English A and selected Science examinations over the period 2004-2008
- To examine the gender composition of the top performing group of students in these CSEC examinations over this period
- To examine the gender composition of the lowest performing group of students during this period

Practically all of the findings presented in this section of the report indicate that females are outperforming males at all levels of the school system. With respect to the SEA, in each year under consideration, the mean score for males in each subtest of the SEA was less than the mean score for females. The standard deviation of the boys' scores was greater than that for the girls in each subtest indicating that there was more variability among males in terms of student performance. The difference between each pair of mean scores was found to be statistically significant and the data also indicate that the overall lower performance of males in the subtests in each year is of some practical significance, particularly in the case of Language Arts and Creative Writing.

To get a better idea of who the lowest performing boys were, the analysis focused on those boys who had obtained less than 30% in **all** of the three subtests in each district in each year. District 2, North Eastern Counties, and District 3, Port of Spain and Environs, stand out in that they were among the three districts having the highest percentage of low-performing boys in all five years under study. Tobago and Caroni had relatively high percentages of low achieving boys in two of the five years under study. The specific low performing schools in District 2 and District 3 were identified. It was found that the low-performing schools in the North Eastern Counties can all be classified as rural schools and those in Port of Spain and Environs can mostly be classified as inner-city schools.

With respect to the CSEC examinations, perhaps the most striking finding is that all the entry gaps (i.e. the difference between the percentage of girls and the percentage of boys taking the examination) are positive except those for Physics, indicating that more males than females consistently have been taking the CSEC Physics examination over the years. For the period under review, the gap for Physics seems to be decreasing and this should be monitored over the next few years.

As was the case for all the other subjects reviewed, the entry gaps for Mathematics were positive over all the years. The largest positive entry gaps were observed for Spanish. This trend runs counter to the Government's stated intention that Spanish should be widely taught in the schools.

The concept of achievement gap (Gorard et al. 2001) was used to investigate the relative performance of males and females at the CSEC Grade 1 level. The technique allows for the determination of the proportions by which males and females accounted for the numbers of Grade 1 awarded at the highest level of the CSEC scale. All of the achievement gaps were found to be positive and relatively large, with the exception of those for Mathematics which are negative (indicating superior performance by males). It should be noted that achievement gaps for Physics at the Grade 1 level are all positive. This means that, although more males enter for the Physics examinations each year, the females outperform the males in the examination each

year. The converse happens for Mathematics; more females enter for the examination but the males outperform the females at the Grade 1 level of certification.

Fieldwork and Analysis of Data

The objectives of this segment of the study were to: (a) investigate the extent to which programmes proposed by the Ministry of Education (to address underachievement of students) have been implemented in primary schools; and (b) identify other strategies explored by schools to deal with the underachievement of students. While the specific Ministry of Education programmes might target performance of students in general, the investigation sought insights on the efforts to improve the performance of boys.

The selection of the school sites for the study was done in consultation with Ministry of Education personnel. Five schools were selected across different educational contexts, using a purposive sampling strategy.

The methods of data collection utilized in the study were interviews and classroom observations. Interviews were done with the principals and classroom teachers to obtain their views on, among other things, the use of the interventions in the schools, factors that facilitate, and inhibit, the implementation of the interventions. The interviews were audiotaped and later transcribed.

In all of the cases, the initiatives focused on the development of literacy skills as a critical step in addressing the underperformance of students in school work. Emphasis was placed not only on the improvement of academic performance, but also on the holistic development of students. Salisbury, Rees and Gorard (1999) who investigated the differential attainment of boys and girls in Britain proposed that greater focus be placed on developing the language competencies of students, particularly boys, in efforts to enhance their educational achievement. This aspect of the students' performance was a key element in this investigation.

A notable finding in this study was the wide difference in the involvement that male teachers exhibited in the development of boys and school life in general. On the one hand, there were male teachers who played a central role in the school's intervention for boys and who were actively involved in mentoring boys, while on the other, there were male teachers who apparently had little involvement in school life in general.

With regard to pedagogical practices, the need to make the learning experience interesting and relevant to everyday experiences of boys was underscored in the present study. Similar findings have been reported by other researchers (Alloway, Freebody, Gilbert and Muspratt, 2002; Hyndman, 2007; Lingard, Martino, Mills, Bahr, 2002) who highlighted the need to provide real-life situations in teaching and make pedagogy more connected to the students' lives and world beyond the classroom, thereby helping to motivate boys to learn.

The findings revealed a number of factors that facilitated, and impeded, the implementation of the interventions at the school level. A collective community effort, in particular, collaboration within the schools and involvement of stakeholders outside of the schools seemed to facilitate the implementation of interventions. The provision of training through workshops, the availability of appropriate teaching/learning resources, and the creation of enabling learning environments

also appeared to serve as facilitators to some interventions. On the other hand, it was felt that a lack of classroom space and training for the new teachers could impact negatively on the effectiveness of an intervention.

The investigation found no curriculum interventions designed by the Ministry of Education that specifically addressed the underperformance of boys in schools. If such interventions exist, they were not unearthed in this study. The investigation revealed school-based initiatives designed to address literacy problems of students and the development of students as a whole. One of the school-based initiatives targeted the underperformance of boys, in an informal and unstructured way.

Content Analysis of Curriculum and Assessment Instruments

For the purposes of this report, content analysis was performed on the primary school curriculum (for Language Arts, Mathematics, Social Studies and Science – a total of 25 syllabi). One coder was utilised in this study and the coding matrices are to be found in the Appendix as Appendix B. This analysis was conducted to:

1. Determine the content coverage
2. Quantify the cognitive demands being made at the topic level
3. Determine the intended attitudinal impacts as may be indicated by affective outcomes
4. Identify the types and number of each type of recommended teaching strategies and classroom activities
5. Identify the types and number of each type of recommended teaching resource

Additionally, all four (4) assessment artefacts provided by the MOE have been analysed using content analysis. These assessment instruments were the National Tests 2006 for Language Arts and Mathematics, Standards 1 and 3 and were analysed to:

1. Determine the content strands being tested
2. Extent to which these content strands were tested

The data gleaned in this component of the report revealed that some curricula documents do provide adequate support and guidance for improving learning outcomes and achievement. The Language Arts curricula were found to be best in this regard. However, all curricula need to be equally comprehensive to facilitate meaningful teaching and learning experiences.

Given very spotty achievement on quantitative skills, the mathematics curriculum ought to reflect sensitivity to the possibility of poor attainment of these skills at varying points in the child's development. Levels of cognitive demand are somewhat low in both the Science and Mathematics curricula, with only a few learning outcomes emerging from higher up Bloom's taxonomy.

The Language Arts Curriculum provides a copious number of recommended teaching strategies and teaching resources; each in separate columns. In contrast the Mathematics curricula provide 'suggested activities' which largely prescribe activities for students, vaguely recommend teaching strategies and imply likely teaching resources. Prescribed classroom resources need to

be varied to appeal to a wide range of interests. And, teaching strategies must be highly differentiated to engage students' various learning styles, experiences and intelligences.

The Social Studies curriculum is organised around five central strands: Personal and Social Development, History, Geography, Citizenship and Health. Of the one-hundred and forty three (143) objectives set out in the entire Social Studies Curriculum for the primary school level, a significant portion of these impact on the affective domain. The potential for developing appropriate attitudes is obvious and this curriculum commitment to the socialisation of the child is commendable. However, there is no reference to understanding self as a gendered being.

Whiteley (2002) suggests that issues of gender fairness in testing are “best resolved by investigation of the demands made by syllabi and modes of assessment in relation to gender differences” (p. 192). What is pertinent in this study is how curriculum content is tested. For the most part, emphases in the Language Arts curriculum correspond to emphases in the National Test. Grammar and Reading Comprehension feature highly in both the curriculum and in the assessment. What is of concern is the testing of other dimensions of language competence, in particular speaking and listening; areas that are treated with extensively in the Language Arts programme. Perhaps the National Test needs to be expanded beyond a paper-based test, as currently obtains, simply because these skills are critical to boys' overall achievement and failure to test (at this important level of assessment) may lead to de-emphasis in building these skills. Indeed as has been noted, differentials in language arts performance are large and in favour of females.

General Summary and Recommendations

Following is a **summary** of the findings from the components of this study:

- The debate in the literature about male underperformance in the education system is a complex one. While some feel that there is excessive attention being paid to the phenomenon, others argue that it poses a serious threat to the stability of society.
- Not all boys are underperforming and not all girls are performing well. There is therefore need to pay attention to “which boys” and “which girls” are experiencing difficulty.
- Strategies for dealing with underperformance should take on board ways of paying attention to the individual, general classroom pedagogy, the school context and the socio-cultural background of the learner, and the involvement of the whole school.
- Education policy documents in Trinidad and Tobago portray the need to ensure learning by all students, regardless of gender.
- In Trinidad and Tobago girls are performing better than boys in nearly all examinations in the primary and secondary education sectors. Many of these differences in performance are found to be statistically significance but only some are found to be of practical significance.
- In the primary sector in Trinidad and Tobago, differences between males' and females' performance tend to be most marked in the area of Language Arts.
- Boys in some rural and inner city schools in Trinidad and Tobago have displayed the lowest levels of performance in all aspects of the Secondary Entrance Assessment.
- The limited classroom observations carried out indicate that initiatives aimed at addressing under-performance in local primary schools focus on both improving

academic performance and promoting the holistic development of students. This is done primarily by focusing on improving the language competencies of students, particularly boys.

- The role of male teachers in the effort to enhance the performance of boys in the schools observed was not consistent. It ranged from active participation to disengagement.
- A collective community effort, collaboration within the schools and involvement of stakeholders outside of the schools seemed to facilitate the implementation of interventions. The provision of training through workshops, the availability of appropriate teaching/learning resources, and the creation of enabling learning environments also appeared to serve as facilitators to some interventions.
- Generally, interventions in the classrooms observed were not monitored in a systematic way and often only one or a few members of staff were involved in the intervention.
- There is a lack of uniformity in the way curricula for primary schools are presented. The Language Arts curriculum presents teachers with many useful examples of teaching strategies and resources that could enhance the learning of students.
- The content of the Language Arts curriculum is such that the areas of reading mechanics and reading comprehension are more heavily dealt with at the lower primary level than at Standards 1 and 2. It is unclear how this might be impacting on boys who are thought to often lack interest in reading at this level.
- The level of cognitive demand in the science and mathematics curricula seems to be low in the initial stages but, generally, this increases up the school system.
- While the Social Studies curriculum promotes the understanding of self, it does not specifically address the understanding of self as a gendered human being. This is a grave omission.
- Some skills promoted in the national curricula cannot be tested by the paper and pencil test which is the predominant form of testing in Trinidad and Tobago. Otherwise, there is a good match between skills outlined in the curricula and skills tested in the National Test.

In light of the above, the following **recommendations** are made:

1. There is the need to pay attention to the specific needs of all students, and boys in particular, in rural and inner- city schools. While the education system may set goals for where all students should be at the end of primary school, it must also be acknowledged that different students may need to travel along different roads to get there.
2. Since both the literature and the classroom studies done show that reading plays an integral role in students' performance generally, greater effort needs to be made in devising strategies to enhance the reading ability of students. The work done in the CETT programme should be built upon. Included in the thrust should be a greater use of multiple texts that go beyond traditional print, especially for boys.
3. Teachers should set high standards for all students. This might have greatest significance for boys who are under-performing. Going along with this strategy is the need to build-up the self esteem of boys. This can be achieved through implementation of a proper Health and Family Life Education curriculum in the primary schools.

4. A research project should be initiated which explores the in-school interventions to enhance the performance of boys in a selection of schools that are so involved. This should take the form of in-depth case studies that would generate rich, thick descriptions of these interventions from which lessons could be learnt for possible application in schools with similar contexts.
5. Teachers are central to any effort to enhance the performance of boys. But teachers must first understand themselves as gendered beings and that understanding must extend to an appreciation of what it means to be a girl and what it means to be a boy in their given teaching context. There is therefore the need for continuing professional development of teachers in this area, possibly through the mounting of specifically designed short courses to deal with this.
6. Stakeholders in the community should be encouraged to become more active participants in the education of boys. It is now generally accepted that a multi-sector approach is needed in the effort to deal with boys in the system who are under-performing and especially those who may be classified as being at risk.

SECTION 1: INTRODUCTION

The overall purpose of the consultancy was interpreted to be the generation of strategies to correct the perceived underperformance of boys in the school system in Trinidad and Tobago, particularly at the primary level. Such strategies were to be arrived at after certain preliminary work had been undertaken, viz:

- A review of pertinent literature and pertinent government policy documents
- A statistical analysis of the performance of boys throughout the primary, secondary and tertiary levels, with information on the early childhood sector provided where available
- An analysis of steps that are being taken in some schools to deal with the issue
- An analysis of Ministry of Education curricula and testing materials for gender bias with respect to boys'/girls' achievement
- An analysis of the level of implementation in schools of relevant strategies as outlined in government documents
- Consultation with significant stakeholders

Further, the terms of the consultancy stipulated that recommendations were to be made for appropriate library resources and appropriate teacher professional development programmes that could assist in achieving the goal of enhanced performance levels by boys.

After consultation with the Ministry of Education, it was decided that the project would be scaled down to focus mainly on the primary sector. A relevant Work Plan was produced (See Appendix A) and this was accepted by the client.

The study was conducted by a team of researchers led by a Principal Investigator because of the many tasks that were to be performed. The overall task was broken down into six major components based on the remit described above and team members were assigned to components. Communication among team members was conducted through face-to-face meetings and through the electronic medium.

Background to the Study

There is growing concern worldwide about the level of achievement of boys. There is much research published on the gender gap in educational achievement in which girls seem to be outperforming boys. Indeed, in a recent preliminary study of gender differentials in educational achievement in all subjects at the CXC-CSEC level during the period 2000-2004, George (2005) found that girls in Trinidad and Tobago performed at least as well as boys and, in many cases, outperformed boys. Similarly, in an analysis of performance at the CEE/SEA examinations over the period 1995-2003, George (2004) found that females outperformed males in every subtest of these examinations in each of the years. Using the Cohen's d statistic as the yardstick, these differences were found to be small or negligible, except in the case of essay writing where the differences were found to be small to medium.

While overall statistics might show that girls are attaining a higher level of achievement, indications are that some girls are underachieving while some boys are doing quite well. It is

therefore important to address the issue from the perspective of underachievement in schools generally. This would allow for a focus on the large numbers of boys who are thought to be underachieving while also catering for those girls (fewer though they may be) who are not performing well. This study tried to adopt this approach wherever feasible.

Jha and Kelleher (2006) suggest that two aspects of underachievement that need to be considered are participation and performance. In order for students (both boys and girls) to perform in the formal education system, they must at least be present at school so that they could be exposed to (and hopefully benefit from) what schools have to offer. Two important questions therefore are: What is the level of attendance of boys/girls in the various segments of the school system? What is considered to be a satisfactory level of attendance? Attendance by itself is not enough. Students must also be engaged in their work if their performance is to be impacted positively. Although student attendance will not be considered in this proposal because the terms of reference for this consultancy do not address the issue of student attendance, it must be stressed that this can have some bearing on student achievement.

Equally important is the issue of the standard of performance that is considered to be acceptable. Typically, the yardstick that is used to decide about underperformance is the performance of girls when boys are being considered and the performance of boys when girls are being considered. This pitting of boys against girls, though commonly done, may not be the most useful approach. A more instructive approach might be to relate the performance of all students to some pre-determined set of standards. At this point in time, though, the debate has hardly shifted in this direction as much of the discussion focuses on boys' achievement *relative to that of girls*. In the Trinidad and Tobago context, this is indeed the practice and, in the absence of the adoption of clearly defined standards of performance, the practice is likely to persist.

Most Caribbean research with respect to gender in education can be categorised as research that fits into gendered socialization paradigms, such as sex-role stereotyping, inequalities in access, disparities in achievement and patterns of curriculum participation (Bailey 2002). As the review of the wider literature that forms part of this proposed project shows, there are several other factors that are thought to impact on the performance levels of students in schools. For example, the results of a study conducted by researchers at the University of Cambridge, Faculty of Education suggest that some of the factors that impact positively on performance levels include a focus on pedagogic approaches employed, placing emphasis on individual students by providing mentoring and by helping them to set targets, engaging in the organization of learning at the whole school level, and being mindful of the socio-cultural context in which students would feel comfortable to work (Younger & Warrington, 2005, p. 9).

Following on the heels of other large-scale studies on gender differentials in educational achievement locally and regionally (see for example Bailey, 1997; De Lisle & Smith, 2004; George, 2004, 2005; Kutnick, Jules & Layne, 1997; Rampersad, 1999) this study takes the work one step further to the point of identifying strategies that hold some promise for dealing with underperformance in the Trinidad and Tobago context and bringing to the fore the role that schools can play in ensuring gender equity in the education system.

Layout of the Report

This report consists of eight sections, each designed to match a portion of the remit given by the client. These are as follows:

- Introduction/Background/Layout
- Review of the Literature
- Review of Reports
- Statistical Analysis of Examination Results
- Field Report
- Content Analysis of Curriculum and Assessment Instruments
- General Summary and Recommendations
- Toolkit

SECTION 2: REVIEW OF THE LITERATURE

MALE UNDERACHIEVEMENT IN THE ENGLISH-SPEAKING CARIBBEAN AND OTHER SELECTED COUNTRIES

Introduction

This review is intended to meet the requirement of the consultancy for the conduct of a literature search of local, regional, and international research reporting on underachievement in boys, with special attention to primary and secondary levels of schooling, and of programmes to address this issue.

Methodology

Criteria for Inclusion of Studies

- *Population:* Primary or secondary school students
- *Language:* English
- *Geographical Location:* Caribbean, United States, United Kingdom, Australia, New Zealand, Canada
- *Research Context:* Studies concerning the underachievement of males
- *Currency:* Only studies from 1990 to the present were considered for the non-Caribbean literature, but all relevant research was considered for the Caribbean region

Identification of Studies

A number of library catalogues, online databases, and official and organizational websites were searched with the following keywords (both individually and in appropriate combinations): “primary school students,” “primary education,” “elementary education,” “secondary school students,” “secondary education,” “high school students,” “gender and education,” “male underachievement,” “academic achievement,” “sex differences,” “boys,” “male students,” and “interventions.”

Background

Gender and Achievement

There is a vast amount of research on gender and education, and a significant proportion of this research is concerned with gender and achievement. Weiner, Arnot, and David (1997) note that “underachievement has been described as probably the ‘predominant discourse’ in education in recent times” (as cited in Smith, 2003, p. 283). Gray and Wilson (2006) agree that concern with educational underachievement remains dominant in school life, resulting in the development of a range of school-based strategies aimed at raising academic standards. Differences in the achievement of boys and girls have been of concern to educationalists for more than three decades (Great Britain. Ofsted, 2003; Salisbury, Rees, & Gorard, 1999); however, early work in the 1970s was concerned mainly with raising the participation of girls, especially in mathematics, science, and technology, since the disadvantages experienced by girls were the main issues of concern. However, Weaver-Hightower (2003) notes that beginning roughly in the

mid-1990s, a distinct and growing shift was made towards examining boys' education in the international research on gender and education.

Defining Achievement

Smith (2003) notes that the term “underachievement” is widely used by politicians, journalists, and academics to describe relatively poor academic performance, but that a review of the academic literature suggests that there is little consensus on its definition and measurement. She observes that, often, the notion of underachievement is confused and conflated with that of *low* achievement, particularly in media accounts. She cites McCall, Evahn, and Kratzer's (1992) definition of underachievement, which figures heavily in the literature, as “school performance, usually measured by grades, that is substantially below what would be predicted on the basis of the student's mental ability, typically measured by intelligence or standardized academic texts” (p. 290). Jones and Myhill (2004, p. 531) argue that the term “underachievement” as used in the context of the underachieving boys, implies that boys are not low achievers but underachievers, and that boys are more likely than girls to perform below their potential. In fact, the current underachievement debate has become almost exclusively a debate about boys. Jones and Myhill distinguish low and high achievers from underachievers—low and high achievers are those children whose performance is seen to match their ability, whereas underachievers are those whose ability is not reflected in their performance (p. 532).

Male Underachievement

Frank, Kehler, Lovell, and Davison (2003) argue that concerns over the academic achievement of boys in relation to that of girls is not new. They state that historical evidence situates boys' scholastic performance as a social concern since at least the late 1600s in Europe, and that notions of boys' underachievement have remained a feature of public concern, ebbing and flowing for the past several hundred years. Younger, Warrington, and McLellan (2002) report that one of the most persistent concerns in English education in the closing years of the twentieth century and into the new millennium has been the differential levels of achievement between boys and girls. They argue that while there is dispute about the extent to which the gap is increasing or decreasing, there can be no denying that there is differential achievement between boys and girls. This position is supported by Gorard and Salisbury (1999), who agree that perhaps the most widely shared image of the achievement gap in schools is that the performance of girls is improving more rapidly than that of boys.

Clark, Lee, Goodman, and Yacco (2008), writing from the United States of America (USA), note that a widening gender gap with regard to educational achievement and attainment has become an international issue in the past decade, with male students, as a group, lagging behind female students on a number of important indicators of school success. Rowe and Rowe (2000), in their submission to the “Inquiry into the Education of Boys” undertaken by the Australian House of Representatives, argue that the evidence indicating that boys, on average, achieve at significantly lower levels than girls in ALL areas of the assessed *cognitive* curriculum throughout their primary and secondary education cannot be disputed, and that the evidence is universal. They further argue that over the last 25 years, there has been a notable shift in the pattern of educational performance on monitoring-type achievement tests and on public examinations, to girls outperforming boys on all areas of the assessed curriculum. This shift is seen as being particularly marked in the last decade in Australia, which is consistent with international trends.

The fact that this concern is also shared by educators and policymakers in the Caribbean region has been identified by Jha and Kelleher (2006), who note that concern for boys' underachievement is quite high in several Caribbean countries. They suggest that as gender parity indices have improved for girls, the focus of attention has shifted to the relative underperformance of boys compared to girls, particularly at the secondary level and in their progression to post-secondary and tertiary education. De Lisle, Smith, and Jules (1997) record that concern over the apparent underachievement of males in the English-speaking Caribbean was first raised by Errol Miller in 1991, and that by the late 1990s, as elsewhere, this concern grew sharply, becoming an avalanche of regional conferences and publications in Jamaica, Dominica, St. Vincent and the Grenadines, Trinidad and Tobago, and Barbados.

Despite the vast amount of interest and research on male underachievement, Renold (2001) notes that much of it has been predominantly preoccupied with adolescent boys in secondary schools, and that studies into the ways in which primary school boys negotiate academic success and achievement is relatively under-represented.

Is there justification for concern?

As noted above, the underachievement of boys of all ages has been raised as an issue of international concern. However, there are many who believe that the issue has been blown out of proportion. Salisbury et al. (1999) suggest that, in the United Kingdom (UK), ministerial statements and resultant media coverage have been as significant as systematic research in producing ideas about boys' underachievement, not only amongst the general population, but perhaps among educational professionals as well. They note that the "underachieving boy" captures the newspaper headlines in stark and alarming ways. This has led to the concept of "moral panic," which Titus (2004, p. 145) notes as originating in the work of Jack Young and Stanley Cohen. He explains that in its most common usage, it describes a process of inciting public anxiety about a social problem by means of media hyperbole, and that in moral panic theory, the concern is about a perceived threat to values or interests held sacred by society or "a threat to the social order itself." Titus further suggests that the moral panic about underachieving boys has a profound effect on public opinions and views of educational professionals, with educators and administrators accepting the dominant over-simplified account of girls outperforming boys. This leads them to express concerns that the balance is now tipped in girls' favour and opportunities are being denied to boys.

In the Caribbean, De Lisle et al. (2005, p. 394) also express some discomfort, when they posit that while improving equity is a laudable goal, narrowing the discourse to a singular focus upon underachieving males is worrying. However, Younger and Warrington (2005) advise that the concern over the achievement levels of *some* boys is legitimate, and that in some schools, *more* boys are likely to perform below their potential than girls. In analysing the debate in Britain over its "lost boys," Griffin (2000, pp. 183-184) argues that the debate represents a moment in which a particular discourse of crisis and loss has been articulated. This discourse is most explicitly constructed around gender, which is constituted partly "through" difference and "as" difference, as well as through a series of constant comparisons between the academic performance of females and males. Boys are positioned as both victims of an unspecified loss and as victimized by the privilege that has supposedly been attained by girls. Girls' relatively better academic performance is not constituted as superiority, but as unfair privilege. The determined focus on

gender, and the ways in which class and race are marginalized in this debate are seen as a significant part of the story in the heated debates over boys' underachievement.

Which boys?

Mahony (1997) recognizes that the debate about boys' underachievement has reached epidemic proportions internationally, but notes that there are several variations on the theme. In some countries, the focus has been on examination performance of boys, but even then, there are varying viewpoints about the groups of boys who are underachieving, in which areas, and at what levels. Marchbank (2002), in reviewing Francis (2000) and Noble and Bradford (2000), reports that both texts actually question the generalization that boys are failing and agree that, in fact, it is actually the case that not all boys underachieve and not all girls achieve, and that there continues to be gender bias in certain subject choices and performance. However, he notes that there is agreement that, on the whole, boys perform less well than girls *on average*, and that average boys are doing less well than average girls. In his work on Jamaica, Clarke (2004–2005) notes that not all boys are underachieving and not all girls are doing better than all boys in school. He argues that the data suggest that although all girls are doing better than boys as a group, middle class boys are doing better than other boys and better than lower class girls. In addition, working class girls as a group are doing better than their male counterparts, leading to the conclusion that it is working class boys more than any others that are underachieving. Hutchinson (2004) cites Reed (1999) in support of this class distinction, noting that “the real source of concern for underachieving boys is coming from middle-class parents who fear their sons are being “outclassed” (p. 12).

These views are supported by Tinkin, Croxford, Ducklin, and Frame (2001), who argue that average figures for attainment conceal many differences between groups of students: some males achieve very high levels of attainment, and some females fail to achieve examination awards. They indicate that their research showed far greater differences in school experiences between high attainers and low attainers of both sexes, and between those from advantaged and disadvantaged home backgrounds than between boys and girls. They agree with the conclusions of the Australian researchers, Collins, Kenway, and McLeod (2000) that it is more helpful to consider the “gender jigsaw” than the “gender gap,” because males and females are not homogenous groups. The “which boys? which girls?” approach to tackling underachievement is therefore strongly advocated.

Key Findings on Performance and Participation

Performance

Secondary level

Generally, across the Caribbean, the data from the Caribbean Examinations Council's (CXC) examinations in the 1990s showed that, in general, more girls were sitting examinations and excelling in subjects that are traditionally female, with boys achieving at higher levels in those subjects that are considered the preserve of boys (“Addressing male underperformance,” 1997). However, in 2005, George found that girls in Trinidad and Tobago were outperforming boys in every subject area except mathematics at the Grade I level. In addition, in physics, girls were outperforming boys in Grades I-III combined. These findings were similar to those observed in

Barbados by Kutnick (1999) and Kutnick, Jules, and Layne (1997), where it was found that, on average, females attained at higher levels than males, and females were more likely to be involved in traditional “male” subjects of mathematics and sciences at the highest levels of secondary schooling. However, it was noted that males attained at (relatively) higher levels the longer they “stayed on” at school. This situation was replicated in Dominica (Goldberg & Bruno, 1999) and St. Vincent and the Grenadines (Kutnick, Jules, & Layne, 1997).

The results from the Caribbean are very similar to those observed in Australia and the UK. In Australia, Collins, Kenway, and McLeod (2000) found that the average girl was out-performing the average boy in more subjects, while high achievers of both genders were performing about equally. The better performance of the average girl was in part the result of boys’ preference for particular high pay-off and/or traditional subjects even when they may not do well in those areas, resulting in a longer tail of boys bringing down the average performance in subjects highly rated by boys. In the UK, evidence from a variety of sources shows that the gender gap is wide in English and narrower in maths, with, on average, girls performing better than boys. The gender gap in the sciences has been traditionally very small. Girls tend to do better in the majority of GCSE subjects. Gender differences in pass rate are much narrower at A-Level than at GCSE but gender differences still exist. The gender gap arises mainly because of differences in performance in English and other subjects that are literacy based (Great Britain. Department for Education and Skills [DfES, 2007]; Ofsted, 2003; Salisbury, Rees, & Gorard, 1999).

Primary level

In Trinidad and Tobago, analysis of the 2004 national assessment and the 2003 Secondary Entrance Assessment (SEA) revealed that female primary school students had a statistically significant advantage across all assessments at different grade levels. However, this advantage was small or negligible in mathematics and narrowed considerably at higher grade levels. On the other hand, in language arts and creative writing, differentials were larger and in favour of females. The lower achievement of males in language arts varied dramatically across ability groups and regions, with the gender gap much reduced for higher ability students from urban educational districts (De Lisle et al., 2005). In Barbados, an earlier study in the mid-1990s, indicated that girls scored higher in each of the core curriculum subjects of English, mathematics, and science, as well as in social studies and in the Common Entrance Examination (CEE). In the top year of primary schools, boys were more likely to be found in the lower streams and girls in the higher streams within their schools (Kutnick, Jules, & Layne, 1997).

Participation

In Jamaica, towards the end of the decade of the 1990s, it was found that males are under-participating at the upper cycle of the secondary level and at the tertiary level (Bailey, 2000). This finding was consistent with the results of research in the mid-1990s in Barbados and Dominica, where it was found that over the years of secondary schooling boys participated less. Overall, in Barbados, there was a drop-off in participation rate from 50% in the primary school to 36% in sixth form, while in Dominica, the drop-off was from 53% in the primary school to 38% in the fourth form. Drop-off among the boys was most dramatic among those from a working class background (Kutnick, Jules, & Layne, 1997).

Male Underachievement

Bailey (2000) argues that when indicators such as participation and performance in CXC and university examinations are used to support the thesis of male underachievement, two things have to be taken into account: 1) although fewer males are gaining certification at these levels, those who are participating are in fact doing well in the more critical and scientific areas; and 2) patterns of performance for males vary depending on the curriculum area, and the traditional sex-linked patterns still persist. So that while there are some males who are not performing well, there are others who are doing better than females in the more critical areas of the curriculum. She therefore suggests that it is the wide gap between male and female participation at the higher levels of the education system, rather than differentials in performance based on rate of success, which can be used to substantiate any claim of male underachievement (Bailey, 2000).

Figueroa (2000, 2004) argues that although the issue has largely been posed as one of male underachievement, in reality the problem is one of highly differentiated gender achievement, which needs to be understood in relation to an underlying history of male privileging, whereby the male gender controlled a broader and more powerful social space. For Figueroa, the solution therefore lies in challenging the structures of male privileging that foster gender inequalities and result in negative outcomes for men and women, boys and girls. He argues that measures that further privilege males or segregate the genders to protect males from female competition are unlikely to bring success, and that the gender issues in education cannot be solved by attacking male underachievement in isolation. Rather, the issue of underachievement as a whole, together with all the factors that contribute to the mismatch between gendered identities and the educational system need to be explored together.

Some Factors Identified as Contributing to Male Underachievement

Gender Socializing and Stereotyping/Male Privileging

An extensive debate has grown up around the way in which masculine identities work to move boys away from academic performance and towards other compensatory, but more negative types of behaviour. According to Connell and Messerschmidt (2005), the concept of hegemonic masculinity was first proposed in reports from a field study of social inequality in Australian high schools. This concept, which has been severely criticized as being flawed, was used in education studies to understand the dynamics of classroom life, and to explore relations to the curriculum and the difficulties of gender neutral pedagogy, among other applications. It has found wide utility in the debate on male underachievement.

Studies in the Caribbean (Clarke, 2004–2005, 2007; Davis, 2003; Evans, 1999; Figueroa, 1997, 2000, 2004; Parry, 1996, 1997, 2000, 2004) have found that boys construct a hard, macho, male image, which runs counter to the academic ethos of school and militates against their educational motivation and performance. Principals, teachers, and counsellors confirmed that these macho attitudes and behaviour affect attitudes to school, behaviour in class, and subject choice. Students are still being channelled into what are seen as gender-appropriate subject areas, with English largely being seen as a “female subject” by male students. The adoption of various forms of nation language (Creole) is seen as more manly. However, performance in English is critical for educational performance across all subjects, so that boys are at a disadvantage. These male gendered responses are informed by cultural expectations, which reflect a version of masculinity

that equates education with the female side of a male/female dichotomy. This results in education being decried as effeminate, sissyish, and nerdish. This masculine gender identity is seen as being wholly detrimental to the educational interests of Caribbean males.

As noted earlier, Figueroa (1997, 2000, 2004) has been a major proponent of the theory of male privileging. He argues that boys' gender socialization gives them less opportunity to gain the basic skills they need for schooling, and that they do not get the training in self-discipline necessary for academic success. Figueroa believes that the "feminization" of education has created problems for boys who have a deeply chauvinist outlook from an early age. The findings from the Caribbean research are similar to that found in the UK (Francis, 2000; Skelton, 2001) and with African-American boys in the USA (Davis, 2001).

Attitudes to Schooling/Class Behaviour

There is a fairly large body of opinion which believes that boys' attitude towards schooling and their behaviour in class are major contributors to their underperformance in the school system. Research in the Caribbean (Clarke, 2007; Figueroa, 2004; Lall, 2004; Parry, 1996; Superville, 1998) found that females appeared to ask more questions, put their hands up, and routinely volunteer answers, while males appeared less responsive and less inclined to join in classroom interaction. Outside of actual lesson work, male students appeared more rowdy and used physical objects (such as desks and chairs) to produce loud and disruptive noise to a greater extent. However, Superville found that secondary male students in Trinidad and Tobago felt that their teachers expected very little of them, and that the low teacher expectation worked as a self-fulfilling prophecy and the boys behaved in the expected ways—they distracted the class, wasted time, were tardy in the submission of assignments, and in most cases earned low academic scores. In addition, Lall found that while none of the secondary school students with whom she worked disliked school, they did not prepare adequately for it in the form of effective study skills or a structured pattern of work during their "after-school" time. These findings were replicated in Australian (Alloway, Freebody, Gilbert, & Muspratt, 2002; Rowe & Rowe, 2000) and American research (Clark, Lee, Goodman, & Yacco, 2008). Additionally, Rowe and Rowe suggest that boys' frequent acting-out behaviours, low self-esteem, and disengagement or withdrawal from willing participation in schooling are caused by the fact that the verbal reasoning requirements and general literacy demands of school curricula and assessment are beyond both their developmental capacity and normative socialization experiences to cope successfully.

However, other research indicates that many boys value education and that there might be other reasons to explain their negative behaviours (Noguera, 2003; Slade, 2002). Among some of the reasons advanced are that: 1) there is little or no value in going to school except for the social life; 2) schoolwork is boring, repetitive, and irrelevant; 3) there are too many bad teachers who either create or exacerbate their problems, largely because they are culturally inconsistent and out of date; and 4) school is focused on preserving the status quo, which makes it an environment that is culturally out of date and inflexible. For most boys, their school experience seems to have firmly established a negative and necessary association between formal learning and what they understand as an institutionalized, unpleasant waste of time, dealing with matters having no obvious relevance to their lives and their perceived needs and interests. Renold (2007) identifies some negative behaviours observed in primary school students in the UK as being utilized to mask the desire for academic success. The majority of boys adopted an array of strategies to

avoid what were perceived as “non-masculine”/“feminine” classroom behaviours and practices, and disguise their desire for, or achievement of, academic success. These included bringing “outside” behaviours into the classroom, playing down academic success, teasing and bullying studious or high-achieving boys not investing in hegemonic masculinity, and devaluing girls’ schoolwork by repositioning their “achievements” as “failures.”

Learning Styles

Many educators believe that boys have a unique learning style which is different from that of girls, and this is frequently cited as one of the causes for their underperformance in an undifferentiated classroom (Clarke, 2007; Cross, 2003; Figueroa, 2004; Hyndman, 2007). Australian teachers observed that boys have a strong interest in electronic and graphic forms of literate practice; were willing to “do” literacy in active, public ways (such as debating, drama, public speaking); and were eager to engage with “real-life” literacy contexts and “real-life” literacy practices (Rowe & Rowe, 2000). Daniels, Creese, Hey, Leonard, and Smith (2001) found that primary school boys generally bring a competitive stance to their learning and associate loss of status with not winning. They note that boys have a preference for individual work as opposed to “sharing”; for “getting on” as opposed to listening; and for “getting their own way” as opposed to coordinating and “filling in.” At the secondary level, Younger, Warrington, and Williams (1999) note that teachers perceive girls as better organized, with more sophisticated communication skills, more articulate, more confident, and far better at independent learning. Boys were perceived as more disordered, more vocal, more boisterous, less advanced for their years, and more easily distracted than girls.

Teacher-Student Relationships

The issue of differential teacher attention to boys and girls has also been advanced as a factor that impacts negatively on boys’ academic performance (Evans, 1999; Goldberg & Bruno, 1999; Mathias, 2005; Superville, 1998; Younger, Warrington, & Williams, 1999). Beaman, Wheldall, and Kemp (2006) argue that, over time, the research literature regarding differential attention to boys and girls has had a variety of emphases, such as (a) the pattern and distribution of classroom talk, (b) the question of who initiates talk and other interactions in the classroom, and (c) teachers’ response to students through non-verbal means such as eye-gaze. The *type* of teacher attention has been identified as more significant than the *amount* of teacher attention. They suggest that aspects of differential teacher attention would appear, in part at least, to be a matter of classroom behaviour management, whereby teachers inadvertently direct negative attention to some students, whose behaviour may well be managed more successfully in other more proactive ways. They maintain that the issue of negative teacher attention in the underachievement of boys debate should not be dismissed readily, since the impact of disproportionate negative responses to boys may adversely affect the classroom environment, not only for the boys attracting negative attention, but for all students. Parry (2000) found that the use of educationally harmful strategies of verbal disciplining, such as sarcasm and ridicule, is justified by the belief of many (untrained, inexperienced) teachers that boys are more resilient and less sensitive than girls.

School Environment and Culture

Certain practices adopted by educational systems and individual schools have also been identified as possible causes for male underachievement (De Lisle, 1997; Evans, 1999). Among these are the hierarchical selective school system and ability grouping/streaming within schools and classrooms, corporal punishment, and insults. These practices appear to demotivate students and lessen their commitment to their academic work. Jha and Kelleher (2006) identified the “drill to kill” teaching and learning methods used in Jamaican schools as increasingly marginalizing boys and many girls from the schooling process. In her case study school in Trinidad and Tobago, Lall (2004) found that there was a lack of early professional intervention in the academic careers of underachieving boys. Their underachievement was allowed to continue for too long without the services of a psychologist. When these services were provided, it was after two years of academic underachievement and at the parents’ expense. Davis (2001, 2007) notes that primary schools, particularly those in low-income and under-resourced areas, have traditionally been neglected, underfunded, and burdened with limited parental and community support. He argues that because of complex social and economic reasons, young males in these school settings are acutely at risk for limited achievement and school disengagement. He laments that for many boys, schools ignore their aspirations, disrespect their ability to learn, fail to access and cultivate their many talents, and impose a restrictive range of their options. Within this overwhelmingly oppressive scholarly context, too many boys simply give up—beaten down by a socialization to school that places too little value on who they really are and what they offer.

Feminization of Teaching

Sokal and Katz (2008) note that in response to concerns about boys’ academic underachievement, as well as the international gender imbalance in the teaching force composition, calls have been made to hire more male teachers. The lack of male role models, especially in primary schools, has been touted as an important contributory factor to the problem of male underachievement. In trying to identify causes of male academic underachievement in Trinidad and Tobago, De Lisle (1997) points to the rapid decline in the number of male teachers, leading to an increasing number of female teachers at the secondary level. He suggests that this phenomenon might impact on the nature of teaching/learning in some subject areas, for example, science. However, while noting that the absence of male teachers was lamented by some heads of secondary schools in Jamaica, who fear that the development of male sex/gender identity is threatened by a lack of suitable role models in school because of the over-presence of female teachers in schools, Parry (1997, 2004) argues that the data suggest that the teaching role is not compatible with the construction of masculinity to which Jamaican males aspire. Hence, she believes that male teachers will be unable to supply the role model that teachers feel to be crucial to the educational performance of male students.

Carrington and McPhee (2008) reported that the majority of primary school teachers they interviewed, irrespective of gender, welcomed policy measures to increase the number of men teachers in primary schools. Despite the growing body of research challenging the role model argument, the bulk of those interviewed believed that increased male recruitment would ultimately serve to reduce the gender gap in achievement by increasing boys’ academic engagement. Citing Carrington and Skelton (2003), they note that policy makers have tended to

assume that there is a causal relationship between the femininization of the teaching profession, the gender gap in achievement, and male disaffection with school, and that boys' educational experiences continue to be circumscribed by the dearth of male role models in schools. They also note the claim that children tend to relate better to teachers of the same gender as themselves and vice versa, and that in addition to having an influence on classroom relationships, the gender of the teacher is often thought to have a direct bearing on the process of teaching and learning. For example, it has been argued that male teachers are more likely than their female colleagues to provide learning experiences that resonate directly with the concerns and interests of boys.

Socio-Economic Factors

Although the debate on male underachievement is overwhelmingly focused on gender-related factors as possible explanations for the phenomenon, there are other factors that need to be taken into account for a full understanding of the problem (Bailey & Brown, 1999; Figueroa, 2004; Kutnick, 1999; Kutnick et al., 1997; Superville, 1998). Some of the factors identified include social class, pre-school attendance, school type, with whom the child lives, who helps with homework, occupations of mothers and fathers, the absence of effective parental support and monitoring at the home level, financial constraints, and community and school violence. Figueroa underscores the importance of social class when he notes that the tendency towards male academic underperformance appears to cut across social classes, but seems to be particularly marked in the inner-city areas, where the issues of instability and harshness of life are most evident. While there are fewer positive role models for boys within the educational system, there are many role models for them on the streets of inner-city communities. This position is echoed by the DfES (2007), which notes that while gender does independently predict attainment, the social class gap has greater explanatory power, and for some groups, ethnicity is a more important factor than gender. Tinklin et al. (2001) suggest that socio-economic disadvantage is still a major source of underachievement, and that other factors affecting achievement include peer influence, the interaction of teaching and learning styles, teacher-student relationships and classroom interaction, curriculum content and assessment methods, and parental and societal influences.

Strategies for Addressing Male Underachievement

In their attempts to address concerns about male academic underachievement in primary and secondary schools, a number of strategies and innovations have been proposed or undertaken by various education authorities or individual schools in many parts of the world.

Single-sex Classes

Single-sex teaching has been a popular strategy for addressing boys' educational and social needs, but it has met with mixed reactions. In their research in one Australian government co-educational primary school in which they sought to examine teachers' and students' experiences of the strategy of single-sex classes, Martino, Mills, and Lingard (2005) found that the teachers taking the boys' classes sought to utilize pedagogical practices and curriculum materials that connected to their perceptions of boys' interests. However, while the male teacher was able to connect with the boys in the single-sex class, there appeared to be a modification of the pedagogy, which, from the boys' point of view, while more engaging, was less intellectually demanding than the mixed class. Mulholland, Hansen, and Kaminski (2004) found no significant

differences in mathematics achievement that could be attributed to gender or class composition. However, scores in school-based English improved for students in single-gender classes, with improvement for girls being greater than for boys.

Younger and Warrington (2006), examining the experiences of a number of UK secondary schools, found conflicting evidence and different perspectives on the perceived effectiveness of single-sex teaching in a variety of different schools serving students in different socio-economic contexts. Although it was claimed that single-sex classes had a positive impact on achievement, this was difficult to identify from an analysis of quantitative data of students' examination performance from year to year, except in one case study. Even in this case study, however, it was acknowledged that single-sex classes were one strategy within a holistic approach to issues of achievement, and that it was difficult to isolate the impact of single-sex classes in themselves on the achievement of boys and girls. An analysis of questionnaire returns from boys and girls, together with focus group and individual interviews, suggested that many boys and girls valued the opportunity to be taught in single-sex classes for "some" subjects. Such classes were seen as providing a protected environment conducive to the learning of both girls and boys because they are insulated from the distractions and off-task behaviour of the other sex, there is less harassment and potential embarrassment, confidence can be built up, and students can be encouraged to participate more constructively in lessons. However, Figueroa (2000) cautions that measures that further privilege males or segregate the genders to protect males from female competition are unlikely to bring success.

School Policies and Practices

There are few studies in the Caribbean documenting school policies and practices (see Jha & Kelleher, 2006; Lall, 2004). However, in the UK, there is a much more aggressive approach to the development and implementation of interventions and strategies (Burns & Bracey, 2001; Carrington & McPhee, 2008; Daniels et al., 2001; Lindsay & Muijs, 2006; Ofsted, 2003; Tinklin et al., 2001). Some of the strategies include: early identification of potential underachievement; the provision of a programme of literacy support and development; the empowerment of boys to make appropriate decisions about themselves and their lives through mentoring programmes; variation of teaching styles and lesson content to take account of apparent gender differences in children's preferred learning styles and their ostensible interests; implementation of a broad diverse curriculum; data monitoring at the individual level, with detailed data collected on performance, effect, and attendance; generally high, but realistic, expectations with achievements being celebrated through displays and rewards; a strong ethos of the "school as community" and stressing of the importance of education; and a strong connection and expectation of partnership with parents, with explicit recognition of the reciprocal nature of demands and responsibilities of both home and school.

Research on Australian schools, conducted by Lingard, Martino, Mills, and Bahr (2002) found that those strategies which focused on improving classroom practices and enhancing school organizational capacity achieved good outcomes for boys and girls. However, it is suggested that the most effective approaches probably involved a melding together of classroom pedagogy and learning community strategies with deep teacher knowledge and understanding about the impact of gender upon students' schooling. Mills and Keddie (2008) propose the productive pedagogies model as an appropriate means to address male underachievement. This framework, with its

emphasis on supportiveness, ensures that those boys who struggle with school are supported in their learning, while providing a classroom environment free from gender-based put downs towards girls and boys who attempt to engage with the learning process. Munns et al. (2005) found that disaffected students benefitted from pedagogies that engage their worldly interests, and from interesting and intellectually challenging learning experiences, whereby they acquired new knowledge and had opportunities opened for them, both within and beyond their immediate communities. They seemed to benefit from schools that acknowledged their out-of-school learning experiences and interests as a source of knowledge acquisition and production.

The “Raising Boys’ Achievement” Project (Younger & Warrington, 2005) sought to identify strategies that appear to have the potential to make a difference to boys’ (and girls’) learning, motivation, and engagement with their schooling and, consequently, to raise levels of academic achievement. They suggest that intervention strategies can be grouped into four different areas: 1) Pedagogic – classroom-based approaches centred on teaching and learning; 2) Individual – essentially a focus on target setting and mentoring; 3) Organizational – ways of organizing learning at the whole school level; and 4) Socio-cultural – approaches that attempt to create an environment for learning where key boys and girls feel able to work with, rather than against the aims and aspirations of the school.

Researcher/Teacher-Initiated Interventions

There have been many interventions reported in the international literature, but not many in the local and regional literature. In Trinidad and Tobago, Superville (1998) reports on the Integrated Study and Self-Improvement System (ISIS), an intervention programme aimed at reversing academic underachievement, which was teacher-initiated and which adopted a trifocal approach that involved students, parents, and teachers. It also attempted to integrate the study and life skills that students need to possess if they are to have a chance at achieving academic and life success. Two areas of deficit were addressed: academic and motivational/affective. While ISIS needed more time for reinforcement, it was partially successful as 75% of the male students displayed an improvement in their academic performance and general attitude to their academic work.

Alloway, Freebody, Gilbert, and Muspratt (2002), report on Phase 2 of a study that focused on developing and trialling interventions, and evaluating and documenting their effectiveness. Teachers reported increased engagement in literacy learning among boys and improved confidence in their uptake of literacy practices, as well as improvements in (a) students’ vocabulary, (b) overall quality of literacy work, (c) behaviour and attitude, and (d) capacity to operate as critically literate text analysts.

The United Kingdom Literacy Association (2004) designed a practitioner-based project to provide a focused, but substantial and reliable, evidence base drawn from activities designed to raise boys’ achievement in writing. The project impacted not only on standards of boys’ achievements in writing but on teachers’/practitioners’ professional development and capacity. The planning and teaching model with the integration of drama and/or visual approaches was successful in promoting marked and rapid improvements in standards of boys’ writing. Positive changes were noted in the attitudes, motivation, achievement, and attainment of boys who had been described as underachieving in writing. Teacher/practitioner assessments showed that in

71.5% of the sample, writing levels had improved one third of a level or above in the course of one term. The project had a noticeable effect not only on levels of writing attainment but also beneficial effects on reading, speaking, and listening.

Sokal and Katz (2008) report on a study that sought to investigate the effects of two classroom variables on boys' reading attitudes and achievement—male reading teachers and computer-based books. The participants were 110 third-grade and fourth-grade boys attending 12 schools in Winnipeg, Canada, who were identified as struggling readers, with 13% viewing reading as a feminine activity. There were significant gains in reading performance over the course of the intervention, but there was no significant main effect of teacher's sex on any of the dependent variables. There were no significant differences between those boys working with male or female research assistants or with or without computers in any of the performance measures or reader self-perception measures in the total sample of boys. Although the study demonstrated the ability of male reading teachers and use of computer-based books to de-feminize boys' views of reading, there was no evidence of differential effects on boys' reading achievement or reader self-perceptions between boys taught by males or by females, whether or not they use technology in their reading practice.

Teacher Education

In recognition of the importance of teacher education in addressing the problem of male underachievement, Clarke (2004–2005) reviewed the revised teacher preparation curriculum in Jamaica and found that it has incorporated salient issues and approaches to help student teachers contend with their roles in the socialization of boys (and girls). He notes that in the course "The Emergent Teacher," student teachers are expected to "develop an understanding of attitudes to gender and sexuality and become aware of how beliefs about these areas lead to stereotyping in the classrooms." In addition, they are expected to discuss common differences in the experiences encountered in the socialization of males and females; make suggestions for changes that can improve experiences and learning for both genders; and discuss the feminization of the teaching profession, among other issues (p. 27). In the course, "Understanding the Learner," student teachers are expected to "demonstrate an understanding of issues related to sex, gender, masculinities and femininities, families and caregivers, and the ways in which these manifest themselves in schools and classrooms" (p. 28). Students pursuing the early childhood education option are required to discuss gender differences in learning styles and academic achievement in boys and girls; issues of male academic underachievement, the absence of male role models at home and school; curriculum appropriateness and relevance to the developmental needs of boys; and differences in expectations regarding boy's and girls' behaviour, among other topics. Clarke concludes that the response of teacher education to gender socialization in Jamaica is seen as encouraging. It is hoped that the vision to develop a new teacher—a teacher who is not afraid of grappling with the real causes of social inequalities will become a reality.

Support Systems

The need for family and community support systems to assist in dealing with the problem of male underachievement has been identified by Clarke (2007), in his study of the gender beliefs of 2 teachers and 12 parents, and the gender identity of thirty 8- to 10-year-old boys in two primary schools in Jamaica. He noted that Jamaican boys who had their fathers highly involved in their lives did well at school. They had a better record of social behaviour; they were less

likely to be involved in fights and other anti-social behaviours and more willing to participate in class and to volunteer to help at school. With the exception of two fathers who confessed to not spending enough time with their respective sons, no other parent took responsibility for their son's poor performance.

Selected Recommendations

Socialization

1. Show greater respect for the practices that make women and girls successful—persistence, spending time on tasks, taking responsibility for their own learning, obeying school rules, and arriving at school with a greater sense of preparedness to work (Clarke, 2007).
2. Examine the ways in which popular culture could be engaged in changing the current image of manliness/masculinity that is proving so detrimental to so many boys and men (Clarke, 2007; Skelton, 2001).
3. Recognize that interventions designed to motivate underachieving boys through football study centres and “boy-friendly” texts will fail to reach boys (high and low achievers) who would like to, or choose to, invest in and take up alternative masculinities. Such interventions employ the very discourses that frame academic study as “non-masculine” and “feminine,” and can only operate to perpetuate the discourse that “real boys don’t work” (Renold, 2007).

School Policies and Practices

4. Discontinue school practices that regard some activities as the exclusive domain of boys and others of girls (Clarke, 2007; Evans, 1999).
5. Eliminate the gendered curriculum that still prevails, especially at the secondary level (Clarke, 2007; Goldberg & Bruno, 1999).
6. Remove tracking and selective systems within the classroom and among classes, which may accentuate differences in the learning experience of students (De Lisle, 1997).
7. Train and encourage schools to engage in action research in order to solve some of their own idiosyncratic problems (De Lisle, 1997).
8. Pay greater attention to the issue of differential performance among males and females, by placing greater value on school improvement practices that minimize gender differences in access and achievement (De Lisle, Smith, & Jules, 2005).
9. Pay greater attention to helping all primary school students reach defined basic competency levels in reading and writing, using a range of proven strategies, such as partnered reading, a literacy hour, diversifying male students’ interest in reading, and parental involvement in literacy activities both at home and school (De Lisle, Smith, & Jules, 2005).
10. Review policies on streaming (Evans, 1999; Noble & Bradford, 2000).
11. Undertake early intervention in the lives of students once persistent failure is apparent (Lall, 2004).
12. Develop support systems that will provide fora for the acquisition of coping skills with regard to anxiety, anger, frustration, and failure (Lall, 2004).

13. Ensure that the school has a strong ethos where students and staff show respect for each other and offer plenty of extra-curricular activities, thereby making the school a place where boys feel they belong (Ofsted, 2003).
14. Implement behaviour and discipline policies firmly but equitably, with good pastoral support, so the school is a place where boys feel comfortable with learning (Ofsted, 2003).
15. Increase the range and extent of learning support available for students (Ofsted, 2003).
16. Consider the match between students' interests and aspirations, and offer courses that appeal to different types of learners, so catering for those boys who prefer practical to written work (Ofsted, 2003).
17. Encourage teachers to organize student seating arrangements in ways that improve learning, recognizing that some boys, particularly, find it difficult to concentrate when sitting with their friends (Ofsted, 2003).
18. Introduce mentoring and praise and reward system (Noble & Bradford, 2000).
19. Do not develop any school policy that focuses exclusively on boys, since these reinforce gender differences and encourage teachers to think in terms of the strengths of children apropos their sex, and accommodate, rather than address, their weaknesses (Skelton, 2001).
20. Support teachers in devising ways of working more effectively with boys, and encourage the implementation of teaching strategies that foster more discussion and collaboration in the classroom, and which support cooperative and interactive teaching and learning (Younger, Warrington, & Williams, 1999).

Teaching Strategies

21. Facilitate and encourage a far more engaging, active, and participatory approach to learning (Clark, Lee, Goodman, & Yacco, 2008; Clarke, 2007; Goldberg & Bruno, 1999).
22. Vary teaching practices and structure the classroom so that a wide range of learning styles and abilities are accommodated (De Lisle, 1997; Evans, 1999; Ofsted, 2003; Rowe & Rowe, 2000).
23. Pay more attention to students who are falling behind, whether male or female, and maintain high expectations (De Lisle, 1997).
24. Employ appropriate, creative, and individualized techniques in disciplining adolescent boys (Superville, 1998).
25. Consider learning styles and structure lessons that maximize interest and motivation for both males and females (Clark, Lee, Goodman, & Yacco, 2008).
26. Ensure that assessment is followed by feedback which tells students what they have to do to improve standards, showing boys, in particular, specific ways to improve their work (Ofsted, 2003).
27. Monitor students' progress against benchmarks and targets, and intervene early so that boys' problems are addressed before they cause demotivation (Ofsted, 2003).
28. Provide positive reinforcement—immediate and credible awards for quality work, increased effort, and/or improved behaviour (Rowe & Rowe, 2000).
29. Use a variety of assessment modes in order to provide students with the opportunity to produce their best performance (Tinklin, Croxford, Ducklin, & Frame, 2001).

Intervention Strategies

30. Target intervention strategies in terms of (a) institutional policies and processes, (b) classroom interaction processes, (c) the development of school-based gender-relevant programmes for boys, (d) the provision of attribution and motivation training for all students, (e) teacher sensitization, and (f) parent involvement programmes targeting fathers and boys (De Lisle, 1997).
31. Work with individuals and small groups of boys in the classroom, through the collaborative efforts of school counsellors and teachers, to assist students in learning organizational and school success skills (Clark, Lee, Goodman, & Yacco, 2008).
32. Develop programmes that address the common and different needs of the most disadvantaged girls and boys, which should begin at primary school and address aspects of disadvantage such as the negative implications of poverty, isolation, and rurality for girls' and boys' engagements with schooling (Collins, Kenway, & McLeod, 2000).
33. Ensure that programmes to raise achievement seek to do so for all students, rather than simply focus on boys (Francis, 2000).
34. Develop strategies such as peer support and mentoring initiatives within the context of a professional learning community in the school (Lingard, Martino, Mills, & Bahr, 2002).
35. Develop real-world curriculum policies that benefit from incorporating the extended knowledge networks of teachers, students, parents, and community members that lie beyond the school. This would indicate a valuing of the extra-curricular knowledge, learning experiences, and assessment tasks that motivate and engage the boys, and thereby enhance their socio-academic achievements (Munns, Arthur, Downes, Gregson, Power, Sawyer, et. al., 2005).
36. Develop real-world assessment, testing, and benchmarking that legitimize the richness of the learnings, and capture the socio-academic achievements of boys (and girls) from rural and low SES communities (Munns, Arthur, Downes, Gregson, Power, Sawyer, et. al., 2005).
37. Raise awareness of teaching staff, support staff, students and parents, and the wider community (Noble & Bradford, 2000).
38. Establish assessment and monitoring systems designed to identify underachievement in key skills across the curriculum, as well as in individual subjects (Rowe & Rowe, 2000).
39. Adopt a "which boys, which girls" approach to addressing underachievement (Tinklin, Croxford, Ducklin, & Frame, 2001).
40. Address other sources of inequality as well as gender; there should be greater focus on inequalities by gender, social class, and ethnicity at the pre-school and primary stages (Tinklin, Croxford, Ducklin, & Frame, 2001).
41. Ensure that strategies to enhance students' achievements and aspirations are consistently delivered, by all staff, teaching and non-teaching, and carefully monitored, refined, and sustained for a reasonable period of time (Younger, Warrington, & McLellan, 2002).

Teacher Education/Professional Development

42. Revisit the teacher education curriculum in order to reflect the need for gender-sensitive instructional strategies and techniques ("Addressing male underperformance," 1997; Clarke,

2007; De Lisle, Smith, & Jules, 2005; Goldberg & Bruno, 1999; Martino, Mills, & Lingard, 2005).

43. Provide regular teacher development programmes (Lall, 2004).

Research/Data Collection

44. Undertake a rigorous research programme to isolate the range of societal, home, and school factors that contribute to the problems related to boys' attitudes to education and their marked under-participation at higher levels of the education system, and shift the focus from the upper levels of the system to factors operating in the formative years at the early childhood levels of the system (Bailey, 2000).
45. Undertake new research to determine whether teachers' expectations of boys have changed, and the effects parents' and media expectations may be having on teacher expectations and students' performance and behaviours (Clarke, 2004–2005).
46. Provide continuous data indicating differences in achievement in order to sensitize policymakers to the task at hand (De Lisle, 1997).
47. Conduct ethnographic and multi-site case studies investigating the nature of classroom processes that are required to confirm patterns evident in the statistical data (De Lisle, 1997).
48. Collect additional biographical data, such as measures of socio-economic status and ethnicity, which will provide insight into the intersection of gender, race, and social class, so that rather than focusing solely on gender, new investigations should consider all three dimensions together (De Lisle, Smith, & Jules, 2005).
49. Conduct more research on the processes of socialization and the teaching-learning processes in primary and secondary schools (Evans, 1999).
50. Conduct action research at the classroom level so that teachers can respond to the unique needs of their students and improve instructional strategies (Superville, 1998).
51. Incorporate a “which boys, which girls” approach as a fundamental element in consideration of further research and policy development in relation to educational performance and outcomes (Collins, Kenway, & McLeod, 2000).
52. Investigate respective areas of interest for boys and girls and how these might impact on teaching and learning (Hyndman, 2007).
53. Focus future research on boys' learning on how the quality of the relationship between student and teacher impacts on learning (Hyndman, 2007).
54. Conduct further research on how identities—especially related to the intersection of race, class, and gender—are constructed within schools, and how identities affect students' attitudes and dispositions towards school, learning, and life in general (Noguera, 2003).
55. Shift from inter-group comparisons of the two sexes to a greater focus on intra-group analysis of factors contributing to the underachievement of some males. Factors that shape masculinities need to be isolated and studied in relation to problematic boys/men, both inside and outside the formal education system, with a view to designing interventions targeting these particular sub-groups (Bailey, 2000).
56. Conduct further research, with particular attention to the issue of social class differences in relation to gender over time, as well as more dynamic research on gender differences. There

is need to go beyond a comparison of performance to an understanding of the differential processes affecting males and females (Figueroa, 2004).

57. Collect data to determine the relative performance of boys and girls from the various social strata and groups in the society (Miller, 1993).
58. Conduct further research to explain the differences in achievement gaps between subjects and between levels of attainment. In addition, further evidence is required to clarify the effects of pupil-teacher interaction in affecting pupil motivation, engagement, and achievement, and to understand how gendered patterns of classroom interaction operate with pupils at different levels of attainment (Salisbury, Rees, & Gorard, 1999).

Summary

This review of the literature demonstrates the complexity of the debate surrounding the problem of male underachievement. There are equally strong voices for and against the idea of treating it as problematic, with some believing that the moral panic engendered by the media, politicians, and some educational professionals has led to excessive attention being paid to the phenomenon. On the other hand, there are others who believe that there is a serious threat posed to the stability of the society if the problem of underachieving boys is not addressed in a timely manner. However, there are certain issues emerging from the debate that need to be taken on board in any attempt to address the problem at the local level. A major issue is the question of “which boys.” There appears to be compelling evidence that it is not all boys who are underachieving and not all girls who are achieving. It would therefore be prudent to identify the boys and girls who are experiencing problems and ensure that their needs are addressed by any interventions that are implemented. In this respect, it would also be useful to widen the debate from the focus on gender to examine the ways in which race, class, and other socio-economic factors are impacting on achievement. This review has identified a number of recommendations in the literature for addressing the problem of male underachievement; however, it would be strongly recommended that in attempting to address the problem, special attention be paid to the recommendation by Francis (2000), that is, to ensure that programmes to raise achievement seek to do so for all students, rather than simply focusing on boys.

SECTION 3: REVIEW OF OFFICIAL REPORTS

Introduction

A survey of 39 policy documents and reports issued by the Ministry of Education (MOE) and other key stakeholder agencies was undertaken, which resulted in the identification of several findings and recommendations related to male underachievement in education. Younger and Warrington's (2005) system for the classification of strategies that can be employed to mitigate male underachievement in school was adapted and augmented to create broad rubrics under which relevant recommendations from these documents and reports could be subsumed. Younger and Warrington identified four categories: pedagogic, individual, organizational, and socio-cultural. Two more have been added—policy direction, and resource allocation and training imperatives. These six categories are not conceptualized as being entirely self-contained, but rather provide a useful framework to organize approaches for addressing male academic underachievement.

The following are descriptions of these categories:

1. **Policy Directions:** refers to philosophies of education enunciated at the national level that influence and guide the education system. It is to be noted that regional and international policies do impact on national ones in so far as Trinidad and Tobago is signatory to many international treaties on education.
2. **Resource Allocation and Training Imperatives:** refers to commitments made by the MOE to mobilize resources—both human and material—towards addressing gender differentials in achievement.
3. **Pedagogic:** refers to approaches centred on teaching and learning.
4. **Individual:** refers to strategies focused on interventions at the level of the individual student.
5. **Organizational:** refers to ways of organizing learning at the school level
6. **Socio-cultural:** refers to approaches that attempt to create an environment for learning where boys and girls feel able to work with, rather than against, the aims and aspirations of the school.

Recommendations

Policy Directions

Most of the major policy documents issued by the MOE and other ministries and government agencies concerned with the education and training of the children and young people of Trinidad and Tobago explicitly address the rights of all children, regardless of gender, class, race, ethnicity, religion, disability, geographical location, or socio-economic background to an education that will develop their potential to the fullest (*Education Policy Paper*, 1994; *National Report on the Development of Education*, 2008; *National Youth Policy*, 2005; *Standards and Guidelines for the Operation of All Schools*, 2007). However, there is recognition that there are

gender differentials in achievement, as reflected in the suggestion by the Vision 2020 Population and Development Subcommittee that “considerable efforts must be centred upon the following: Gender inequalities in educational achievement of males and females at secondary and tertiary levels” (p. 35). This is supported by the *Draft ICT Policy* (2005), which has a professed target of eliminating “gender disparity in primary and secondary education preferably by 2010, and in all levels of education no later than 2015” (p. 8) through the use of information and communication technology (ICT) in education.

In order to achieve this gender equity, it is recognized that “curriculum content, instructional processes and materials, and students’ choices must be gender fair,” and that “teachers must be educated towards this end of achieving a gender-fair curriculum” (*Education Policy Paper*, 1994, p. 40). Inclusive education is seen as another mechanism for achieving equality of opportunity for all learners, regardless of all considerations, including gender (*Draft Inclusive Education Policy*, 2008).

Resource Allocation and Training Imperatives

The major focus of the documents and reports reviewed with respect to resource allocation is in the area of provision of quality teachers. The *Education Policy Paper* identified careful teacher selection as being very important, and emphasized the “need for ‘balance’ (gender, possible ethnic, academic and professional background, etc.) in the diversification of the range of selected school personnel in particular” (1994, p. 14). The inclusion of gender as an area in need of balance might be explained by the concern about the shortage of male teachers in the school system. In this respect, the *Draft Policy Framework for Transforming and Restructuring Teacher Education and Development in Trinidad and Tobago* [Framework, 2005] speaks to the need for the Government to be “willing to invest and annually underwrite the teacher education of high-ability students. In return these high ability students, who receive special supports as they prepare, must agree to commit to teach for at least four years in the public school system,” (2005, p. 102), as one of the ways of increasing the supply of male teachers.

With respect to resource allocation, another area that has been identified for attention is the area of research. The *EFA Assessment 2000* (1999, p. 76) noted the necessity for the MOE to examine the performance of boys in the system, in keeping with calls for the study of male under-achievement in the region. On the other hand, the National Research Committee, in noting that boys in high-performing schools had high reading achievement, saw the need for “further research [to] be undertaken to determine the important related factors which contributed to or influenced the superior performance of boys” (1993, p. 71) in these schools.

Training is another vital area that has been addressed in the documents. Concern has been expressed about the need for preparing “teachers to deal with issues of gender in the delivery of education since it is becoming clear that boys and girls learn differently in schools” (Framework, 2005, p. 49). In this respect, reading in the primary school has been identified as an area of particular concern for male students, and the National Research Committee has recommended that “special attention should be paid to the training of male teachers in techniques of diagnosing and remediating reading problems” (1993, p. 71).

Pedagogic

In recognizing the need for equitable opportunities for learning for both genders, the documents highlight the role of teachers with respect to the adoption of student-centred teaching strategies that cater to the diverse needs of learners (*Draft Inclusive Education Policy*, 2008; *Draft White Paper on Standards and Guidelines*, 2007; *National Policy on Child Care*, 2005). With respect to the early childhood level, the *National Policy on Child Care* states that “the approach of staff to the children’s use of play materials must be non-sexist and children of both sexes must be actively encouraged to use all the equipment and materials available. Children’s preferences and not their gender must be the deciding factor in what they do” (2005, p. 17). At the primary level, the National Research Committee has suggested that “the reading programme should specifically address the developmental reading needs of boys” (1993, p. 71). Some of the approaches suggested to facilitate the delivery of the curriculum and the improvement in learning outcomes include the intensification of technology-based approaches and the greater use of culture-based processes (*National Youth Policy*, 2005, p. 41).

Individual

It was very striking that, despite the concern articulated in most of these documents for the provision of opportunities to all learners to ensure that they developed their skills and abilities to the fullest, the only reference to support at the individual level noted in the documents was the suggestion in the *National Youth Policy* for the establishment of a mentoring programme in schools and youth organizations (2005, p. 53).

Organizational

On the other hand, there was much more concern with support at the organizational level. Some of the areas identified include: 1) the provision of an environment in which children can develop positive attitudes to differences in culture, language, religion, gender and ability (*National Policy on Child Care*, 2005, p.5); 2) the provision of programmes and services that are inclusive of the range of abilities of learners, responsive to learner needs, and catering for those with potential as well as recognized talents or skills (*Draft Inclusive Education Policy*, 2008, p. 6); 3) the design of learning experiences that recognize and accommodate differences in learning styles and ways of knowing (*Standards and Guidelines for the Operation of All Schools*, 2007, p. 05); 4) the identification of “at-risk” students in the system and the provision of the support needed to keep them in school (*Youth at Risk*, 2001, p. 35); 5) the design of appropriate curricula (*Youth at Risk*, 2001, p. 36); and 6) the removal of current disempowering and alienating teacher-pupil relationships (*Youth at Risk*, 2001, p. 36).

Socio-Cultural

The documents showed little appreciation for the value of creating appropriate environments for learning. However, the *National Youth Policy* noted the need to “ensure that the school as a community-based institution for learning becomes more creative in the transmission of knowledge and skills and in the shaping of the values of children and youth” (2005, p. 53).

Findings

The data presented in the reports with respect to gender and achievement reflect the findings of the research literature, which suggest that at all levels of the education system females are outperforming males. This is documented as recently as in the 2008 *National Report on the Development of Education*, which noted that in all national examinations in Trinidad and Tobago, at both the primary and secondary levels, girls have been found to outperform boys. The scenario has not changed from 2001 when it was noted that “as children move through primary school, both male repetition and drop-out rates exceed those of females. The problems of male drop-out and male under-achievement, the beginnings of which are evident here in the repeats and drop-outs, dog the system with increasing severity at succeeding levels on to completion” (*Youth at Risk*, 2001, pp. 44–45).

However, in making the case that it is necessary to look beyond the surface of the data, the report of the Vision 2020 Gender and Development Sub-Committee referred to the results of research in Trinidad, which showed that it is naïve to assume that it is just boys who present learning and behaviour problems in the classroom. It notes that “these observations showed that both boys and girls had low attainment levels and needed to be supported to improve their achievement in education. This was demonstrated clearly among children of low socio-economic levels” (p. 34). These observations therefore point to other factors affecting male underachievement, with class being of particular concern.

The issue of gender socialization is also considered in the *National Youth Policy*, which states that “it should be noted that historically in Trinidad and Tobago males and females have been socialized to assume gender specific roles. However, in contemporary times and more particularly with the upsurge of feminist ideology these traditional gender specific roles have been revolutionized. ... Indeed, it is argued that males especially young males have become under achievers and are at risk” (2005, p. 26).

The MOE points to strategies that have been adopted to ensure that both boys and girls obtain the best education possible in its 2004 *National Report on the Development of Education*. It notes that “the school curricula are gender sensitive, so that boys and girls can obtain the best education possible,” and that (a) equal opportunities are provided for males and females, (b) gender discrimination has been eliminated from the school curriculum and textbooks, (c) both genders have access to all subjects, (d) gender-sensitive curriculum strategies have been developed and continue to be implemented at all levels of the education system, (e) schools cater to the needs of both genders in extra-curricular activities such as sporting activities, and (f) available resources are distributed equally between the sexes (p. 35).

Summary

This review sought to identify specific policy measures to address the problem of male underachievement. However, it was encouraging to note that the policies seemed to reflect the need to ensure the learning of all students, regardless of gender. All the reports examined spoke generally to the need for equal opportunity for all students regardless of origin or background,

and even when gender was specifically identified, it was generally within the framework of ensuring equal opportunities for all students. It should be noted that the problem of gender balance in the teaching force appeared to be an area of concern for policymakers.

SECTION 4: STATISTICAL ANALYSIS OF EXAMINATION RESULTS

Introduction

A detailed view of the context of this study was obtained through a critical analysis of the performance of students at the terminal primary school examination, the Secondary Entrance Assessment (SEA), and also in selected subjects at the Caribbean Secondary Education Certificate (CSEC) which is administered by the Caribbean Examinations Council (CXC). The objectives of this part of the study were as follows:

Secondary Entrance Assessment

- To examine the performance levels of males and females in the SEA over the period 2004-2008
- To examine the gender composition of the top performing group of students in the SEA over this period
- To examine the gender composition of the lowest performing group of students during this period
- To identify which males are performing at a low level

Caribbean Secondary Education Certificate

- To examine the performance levels of males and females in the CSEC Mathematics, English A and selected Science examinations over the period 2004-2008
- To examine the gender composition of the top performing group of students in these CSEC examinations over this period
- To examine the gender composition of the lowest performing group of students during this period

A summary of the results of the National Test for 2004 and 2005 was also done.

Performance Levels in the SEA (2004-2008)

Methodology

The SEA consists of three subtests – Mathematics, Language Arts and Creative Writing. The subtests are all designed with a free response format for all items. The Mathematics and Language Arts tests carry a total of 100 marks each. In 2004, the Creative Writing subtest carried a total of 12 marks. However, this total was increased to 20 marks during the period 2005-2008.

Data sets of students' scores on the SEA over the period 2004-2008 were obtained from the Division of Educational Research and Evaluation (DERE) of the Ministry of Education in the form of EXCEL files. The SPSS (version 16.0) program was used for the analysis. The procedures used included frequency distributions and t-tests for the comparison of means. Cohen's d statistic was also used to determine practical significance.

No assumption was made about the equivalence of tests from year to year. The focus in the analysis was the performance of students on the subtests in each of the years under consideration and raw scores were used to achieve this.

Findings

Participation

In 2004 and 2005, more females than males sat the SEA but, during the period 2006-2008, the number of males sitting was greater than the number of females (Figure 1 and Tables 1-3). The total candidate population also decreased over the period.

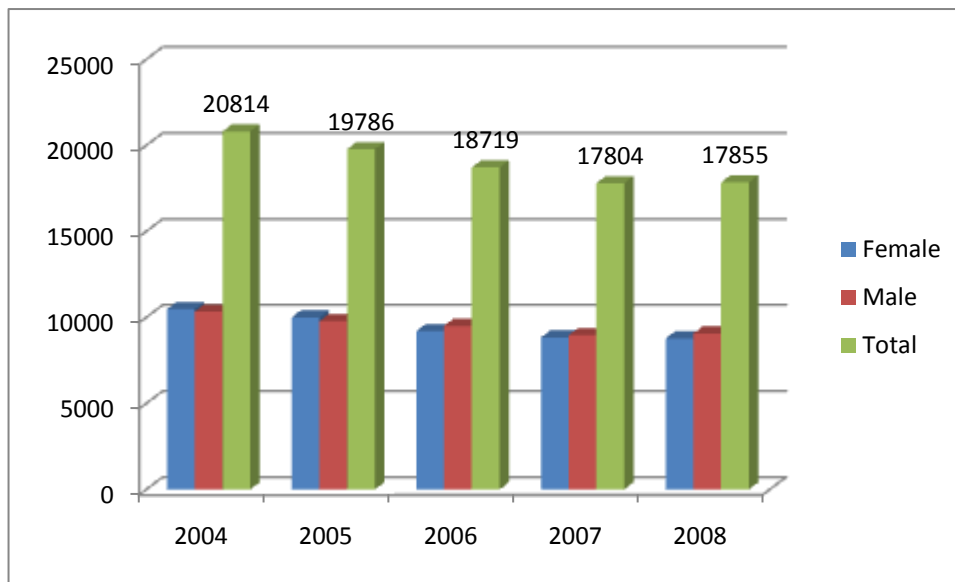


Figure 1: Candidate population in the SEA by sex

Mean scores on subtests

In each year under consideration, the mean score for males in each subtest of the SEA was less than the mean score for females (Figures 2-4 and Tables 1-3). The standard deviation of the boys' scores was greater than that for the girls in each subtest indicating that there was more variability among males in terms of student performance.

The difference between each pair of mean scores was found to be statistically significant. A consideration of effect size measures (using the Cohen's d statistic) indicates that the differences are negligible to small for Mathematics, with d values of 0.21 or less, but range from small to medium for Language Arts and Creative Writing, with d values ranging from 0.40 to 0.54. The largest effect size statistics (ranging from 0.48 to 0.54) were obtained for Creative Writing (Tables 1-3). These data indicate that the overall lower performance of males in the subtests in each year is of some practical significance, particularly in the case of Language Arts and Creative Writing

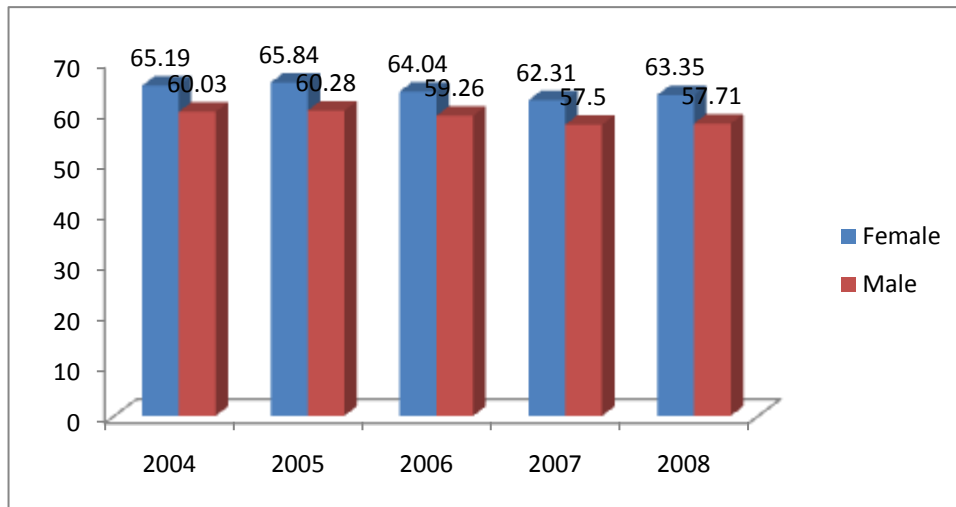


Figure 2: Mean Scores in SEA Mathematics by Sex

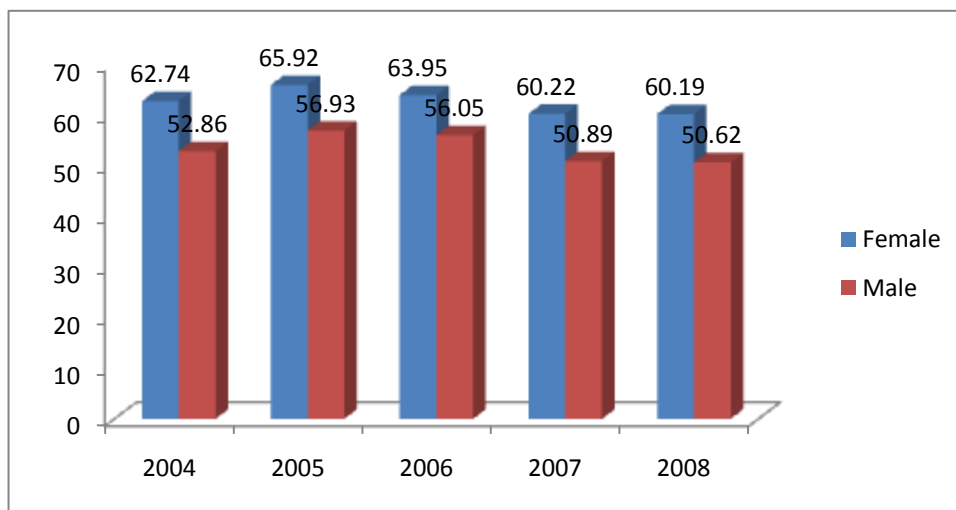


Figure 3: Mean Scores in SEA Language Arts by Sex

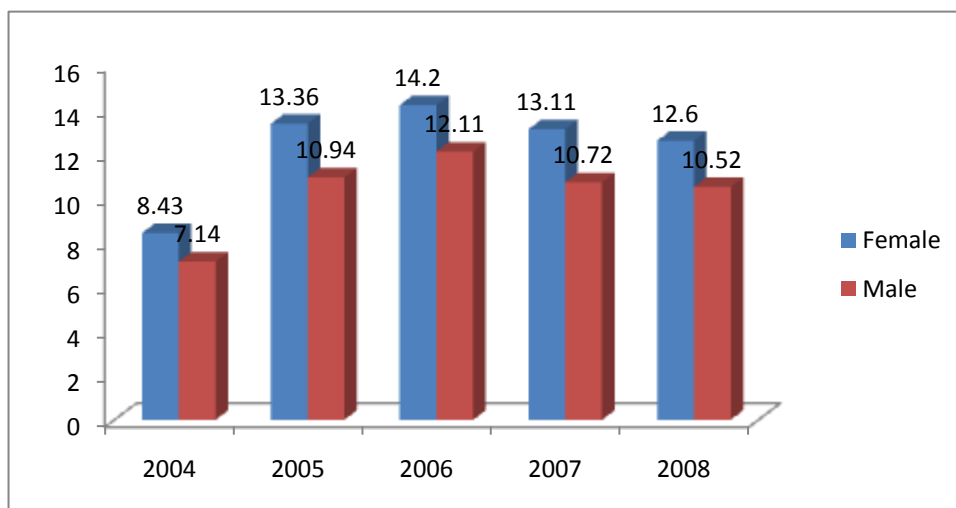


Figure 4: Mean Scores in SEA Creative Writing by Sex

Table1: Performance in SEA Mathematics: 2004-2008

		N	Mean	Std. Dev.	t	P	d
2004	Female	10476	65.19	25.05	14.12	.000*	0.20
	Male	10338	60.03	27.59			
	Total	20814	62.63	26.47			
2005	Female	10007	65.84	25.57	14.48	.000*	0.21
	Male	9779	60.28	28.35			
	Total	19786	63.10	27.12			
2006	Female	9207	64.04	25.46	12.10	.000*	0.18
	Male	9512	59.26	28.41			
	Total	18719	61.61	27.11			
2007	Female	8840	62.31	25.03	12.16	.000*	0.18
	Male	8964	57.50	27.66			
	Total	17804	59.89	26.50			
2008	Female	8784	63.35	25.30	14.25	.000*	0.21
	Male	9071	57.71	27.57			
	Total	17855	60.48	26.63			

Table 2: Performance in SEA Language Arts: 2004-2008

		N	Mean	Std. Dev.	t	P	d
2004	Female	10476	62.74	21.31	30.72	.000*	0.43
	Male	10338	52.86	24.93			
	Total	20814	57.83	23.70			
2005	Female	10007	65.92	18.81	30.02	.000*	0.43
	Male	9779	56.93	23.05			
	Total	19786	61.47	21.49			
2006	Female	9207	63.95	17.54	27.63	.000*	0.40
	Male	9512	56.05	21.46			
	Total	18719	59.94	20.02			
2007	Female	8840	60.22	20.65	28.10	.000*	0.42
	Male	8964	50.89	23.56			
	Total	17804	55.52	22.67			
2008	Female	8784	60.19	20.24	29.58	.000*	0.44
	Male	9071	50.62	22.94			
	Total	17855	55.33	22.18			

Table 3: Performance in SEA Creative Writing: 2004-2008

		N	Mean Raw Score	Std. Dev.	t	P	d
2004	Female	10476	8.43	2.50	34.50	.000*	0.48
	Male	10338	7.14	2.90			
	Total	20814	7.79	2.78			
2005	Female	10007	13.36	4.33	37.56	.000*	0.54
	Male	9779	10.94	4.69			
	Total	19786	12.16	4.67			
2006	Female	9207	14.20	4.02	33.17	.000*	0.48
	Male	9512	12.11	4.61			
	Total	18719	13.14	4.50			
2007	Female	8840	13.11	4.22	35.54	.000*	0.53
	Male	8964	10.72	4.77			
	Total	17804	11.91	4.66			
2008	Female	8784	12.60	4.13	32.12	.000*	0.48
	Male	9071	10.52	4.51			
	Total	17855	11.55	4.45			

Lowest performing students

Frequency tables were generated for students who scored less than 30% in each of the subtests in each of the years and the results were disaggregated by sex. The female/male (F/M) ratio was calculated for this group as well as for the total candidate population in each year. The results are shown in Tables 4-6.

Relatively equal numbers of males and females were entered for the SEA in each of the years as indicated by the F/M ratio in Tables 4-6. If the performance of males and females were comparable, then roughly equal numbers (and equal percentages) of males and females would be found in this lowest performing group. The results show that the percentage of females in the lowest performing group in each subtest in each year was always lower than the percentage of males, indicating that fewer girls (more boys) were performing at this low level. The F/M ratio in the lowest performing group in each of the subtests in each year under review was therefore always smaller than the F/M ratio for the total candidate population in each of the subtests in each year.

The F/M ratio in the lowest scoring group was greatest for Mathematics (ranging from 0.60 to 0.64) and smallest for Creative Writing (ranging from 0.26 to 0.31), indicating that, relative to the girls, the boys' low performance was most acute in the area of Creative Writing in each year under review (Tables 4-6).

Table 4: Lowest performing students by sex: Mathematics

	Total no. of pupils scoring less than 30%	% of total candidate population scoring less than 30%	No. of females scoring less than 30%	No. of males scoring less than 30%	F/M ratio in lowest scoring group	F/M ratio in total candidate population
2004	3073	14.8	1195 (38.9)*	1878 (61.1)	0.64	1.01
2005	3106	15.7	1214 (39.1)	1892 (60.9)	0.64	1.02
2006	3010	16.1	1131 (37.6)	1879 (62.4)	0.60	0.97
2007	3000	16.9	1177 (39.2)	1823 (60.8)	0.65	0.99
2008	3010	16.9	1167 (38.8)	1843 (61.2)	0.63	0.97

*Percentage of total number scoring less than 30% of marks

Table 5: Lowest performing students by sex: Language Arts

	Total no. of pupils scoring less than 30%	% of total candidate population scoring less than 30%	No. of females scoring less than 30%	No. of males scoring less than 30%	F/M ratio in lowest scoring group	F/M ratio in total candidate population
2004	3179	15.3	953 (30.0)*	2226 (70.0)	0.43	1.01
2005	2053	10.4	527 (25.7)	1526 (74.3)	0.35	1.02
2006	1798	9.6	450 (25.0)	1348 (75.0)	0.33	0.97
2007	2811	15.8	843 (30.0)	1968 (70.0)	0.43	0.99
2008	2698	15.1	763 (28.3)	1935 (71.7)	0.39	0.97

*Percentage of total number scoring less than 30% of marks

Table 6: Lowest performing students by sex: Creative Writing

	Total no. of pupils scoring less than 30%	% of total candidate population scoring less than 30%	No. of females scoring less than 30%	No. of males scoring less than 30%	F/M ratio in lowest scoring group	F/M ratio in total candidate population
2004	1376	6.6	326 (23.7)*	1050 (76.3)	0.31	1.01
2005	1495	7.6	367 (24.5)	1128 (75.5)	0.33	1.02
2006	823	4.4	172 (20.9)	651 (79.1)	0.26	0.97
2007	1501	8.4	350 (23.3)	1151 (76.7)	0.30	0.99
2008	1194	6.7	276 (23.1)	918 (76.9)	0.30	0.97

*Percentage of total number scoring less than 30% of marks

Top-performing students

A similar procedure was used to examine the composition of the top-performing group in each of the subtests in each year. The results are shown in Tables 7-9. Again, there is a marked difference between the F/M ratio for the total candidate population and that for the top performing group in the case of Language Arts and even more so in the case of Creative Writing. In each of these two subtests in each year under consideration, the F/M ratio for the top-performing group was greater than the F/M ratio in the total candidate population, indicating that there were more top-performing females than would be expected, given the composition of the total candidate population. In the case of Mathematics, the proportion of females/males in the top-performing group was closer to that in the total candidate population but there was still a slight edge in favour of girls in each subtest in each year.

When the results of the analysis of the lowest performing group and that of the top-performing group are taken together, the picture that emerges is that while there are girls who are performing at a low level, a greater proportion of the boys are not achieving well and while there are boys performing at a high level, a greater proportion of the girls can be found in the high performing group.

Table 7: Top- performing students by sex: Mathematics

	Total no. of pupils scoring more than 90%	% of total candidate population scoring more than 90%	No. of females scoring more than 90%	No. of males scoring more than 90%	F/M ratio in top performing group	F/M ratio in total candidate population
2004	3588	17.24	1924 (53.6)*	1664 (46.4)	1.16	1.01
2005	3676	18.58	1994 (54.2)	1682 (45.8)	1.19	1.02
2006	3238	17.30	1653 (51.1)	1585 (48.9)	1.04	0.97
2007	2342	13.15	1193 (50.9)	1149 (49.1)	1.04	0.99
2008	2255	12.63	1203 (53.3)	1052 (46.7)	1.14	0.97

*Percentage of total number scoring more than 90% of marks

Table 8: Top-performing students by sex: Language Arts

	Total no. of pupils scoring more than 90%	% of total candidate population scoring more than 90%	No. of females scoring more than 90%	No. of males scoring more than 90%	F/M ratio in top performing group	F/M ratio in total candidate population
2004	835	4.01	568 (68.0)*	267 (32.0)	2.13	1.01
2005	577	2.92	402 (69.7)	175 (30.3)	2.30	1.02
2006	247	1.32	157 (63.6)	90 (36.4)	1.74	0.97
2007	533	2.99	331 (62.1)	196 (36.8)	1.69	0.99
2008	350	1.96	231 (66.0)	119 (34.0)	1.94	0.97

*Percentage of total number scoring more than 90% of marks

Table 9: Top-performing students by sex: Creative Writing

	Total no. of pupils scoring more than 90%	% of total candidate population scoring more than 90%	No. of females scoring more than 90%	No. of males scoring more than 90%	F/M ratio in top performing group	F/M ratio in total candidate population
2004	3191	15.33	2080 (65.2)*	1111 (34.8)	1.87	1.01
2005	1951	9.87	1384 (70.9)	567 (29.1)	2.44	1.02
2006	2260	12.07	1464 (64.8)	796 (35.2)	1.84	0.97
2007	1504	8.45	1025 (68.2)	479 (31.8)	2.14	0.99
2008	1240	6.94	783 (63.1)	457 (36.9)	1.71	0.97

*Percentage of total number scoring more than 90% of marks

Who are the lowest performing boys?

To get a better idea of who the lowest performing boys were, the analysis focused on those boys who had obtained less than 30% in **all** of the three subtests in each district in each year. The percentage of boys in each district scoring at this low level was calculated and the results are shown in Table 10. The three districts with the highest percentage of low-performing boys in each year are highlighted.

Table 10: Percentage of low-performing males by district

	2004	2005	2006	2007	2008
1.Caroni	7.1	9.6	5.2	9.7	10.1
2.North Eastern Counties	13.4	10.8	9.4	12.6	9.6
3.Port of Spain and Environs	11.5	12.0	9.2	12.4	10.0
4.St. George East	7.7	8.8	4.7	9.7	7.9
5.St. Patrick	7.6	6.3	4.0	9.0	5.3
6.South Eastern Counties	7.0	6.1	6.6	9.5	5.5
7.Victoria	5.6	5.8	4.5	7.4	5.1
8.Tobago	5.0	8.5	7.9	12.2	7.0

District 2, North Eastern Counties, and District 3, Port of Spain and Environs, stand out in that they were among the three districts having the highest percentage of low-performing boys in all five years under study. Tobago and Caroni had relatively high percentages of low achieving boys in two of the five years under study.

Performance Levels in the National Test

The data obtained from the Division of Educational Research and Evaluation (DERE) of the Ministry of Education did not contain files with results from the yearly sittings of the National Test. Instead, two reports on the examinations (2004 and 2005) were sent.

In 2004 and 2005, the National Test was administered to students in Standard 1 and Standard 3 in public and private primary schools in Trinidad and Tobago. The areas tested were Mathematics and Language Arts. What follows below is a summary of the findings in those reports for the two years as published by the DERE. The reports highlight performance by district.

Standard 1 – 2004

- Female students performed significantly better than males in Mathematics and Language Arts in all 8 districts
- In every district, gender differences were larger in Language Arts than in Mathematics.

- The Cohen's d values for the differences varied from "insignificant" (less than 0.2) to "medium" (0.5 to 0.8).
- In both Language Arts and Mathematics, small differences were noted in Caroni, St. Patrick, South Eastern and Victoria.
- In Language Arts, small differences were also noted in North Eastern, Port of Spain and Environs and St. George East
- In Tobago, the difference in Mathematics was small but the difference in Language Arts was found to be medium. This was the only medium-size category found in the analysis. (Taken from Ministry of Education, 2004, pp. 12-13).

Standard 3 - 2004

- Female students performed significantly better than males in Mathematics and Language Arts in 6 districts. Caroni and St. Patrick were the exceptions.
- In every district, gender differences were larger in Language Arts than in Mathematics.
- The Cohen's d values for the differences varied from "insignificant" (less than 0.2) to "medium" (0.5 to 0.8).
- Differences in performance in Language Arts were small in Caroni, North Eastern, St. George East, South Eastern and Victoria.
- In Tobago, the gender difference in performance in Mathematics was small while the difference for Language Arts was medium. The difference in Language Arts performance was also medium in St. Patrick.
- Differences in performance in both Language Arts and Mathematics were small in Port of Spain and Environs
- Differences in Mathematics were insignificant in Caroni, North Eastern, St. George East, South Eastern, St. Patrick and Victoria. (Taken from Ministry of Education, 2004, p.14)

Standards 1& 3 - 2005

The account on gender differences for Standards 1 and 3 follows.

- Girls performed significantly better than boys in both Mathematics and Language Arts at both Standard 1 and Standard 3.
- The difference in performance in Standard 1 Mathematics was small in all educational districts while in Standard 3 the difference ranged from small to insignificant with the latter finding pertaining to Caroni, St. Patrick and Port of Spain and Environs.
- There was an overall decrease in the size of the gendered effect in Mathematics from small in Standard 1 to insignificant in Standard 3.
- The difference in performance between girls and boys in Language Arts was small in Standard 1 but this difference increased to medium in size in Standard 3 in North Eastern, South Eastern and Tobago. (Taken from Ministry of Education, n.d., p.67)

Performance Levels in the CXC-CSEC Examinations

The database for the investigation was also obtained from the Ministry of Education, Trinidad and Tobago. Summary statistics for males, females, and the total population were provided for the various CSEC subjects by the Ministry of Education. There were thus fewer variables that could be used in the analysis when compared with the database for the SEA.

In this study, student performances in English A, Spanish, Mathematics, Social Studies and the science subjects were examined. This selection was made to match the subjects that are currently being pursued in the primary system (although science is taught as a single subject) and which are now being examined in the National Test .

Methodology

The procedure adopted here was the same as that used by George (2005) in her gendered study of earlier cohorts of students writing the CXC-CSEC examinations.

The analysis was done using the concept “entry gap” as detailed by Gorard, Reese, and Salisbury (2001). Gorard et al. define the gender entry gap as “the difference between the percentage of the entry for any assessment who are girls and the percentage of the entry cohort for any assessment who are boys” (p. 127). Thus, if 60% of the students entering for an examination are girls and 40% are boys, then the entry gap is 20. Gorard et al. explain that the choice of positive or negative signs to represent the gap in favour of one gender is arbitrary. The term “entry” with respect to examinations has been used to refer to those students actually sitting the examination (Gorard & Smith, 2003).

The convention adopted was that a positive gap means that more girls than boys are sitting the examination. Thus, for the calculation of the entry gap for each subject for each year, the percentage of boys in the candidate population was subtracted from the percentage of girls in that population. A positive result indicates a higher percentage of girls while a negative result indicates a higher percentage of boys in the candidate population.

The concept of “achievement gap” as defined by Gorard et al. (2001) was used in the analysis of gender differentials in achievement levels in the various CSEC subjects. Gorard et al. define the achievement gap mathematically as:

$$[(GP - BP)/(GP + BP)*100] - (\text{Entry gap})$$

where GP and BP refer to the number of girls and boys, respectively, who attain a specified level of achievement. This specified level may be a single grade or a grade range. The formula allows for the calculation of a numerical value representing the difference in achievement by males and females, corrected for difference in entry levels in a particular examination. (George, 2005)

In terms of the significance of their results obtained in the analysis of the British GCSE examinations, Gorard et al. (2001) explain: “Although the significance of any gap is dependent

to some extent on the number of entries, it is assumed here that differences of the order of 4% or less in entry or performance by gender are of little consequence” (p. 128).

Findings

Entry gaps

Tables 11-18 show the entry gaps for the CSEC subjects mentioned above for the period 2003-2007. Roughly equal numbers of boys and girls enter the secondary school system on the basis of the SEA examination. However, the data in Tables 11-18 indicate that the distribution of males and females in the CSEC candidate population does not mirror the distribution on entry to secondary school.

Perhaps the most striking finding is that all the entry gaps are positive except those for Physics, indicating that more males than females consistently have been taking the CSEC Physics examination over the years. For the period under review, the gap for Physics seems to be decreasing and this should be monitored over the next few years.

As was the case for all the other subjects reviewed, the entry gaps for Mathematics were positive over all the years. The largest positive entry gaps were observed for Spanish. This trend runs counter to the Government’s stated intention that Spanish should be widely taught in the schools.

Table 11: Physics entry levels for 2003-2007

	Number and percentage entered for CSEC Physics					
	Total	Male	%	Female	%	Entry Gap
2003	3,496	2,068	59.2	1,428	40.8	-18.3
2004	3,571	2,114	59.2	1,457	40.8	-18.4
2005	3,972	2,324	58.5	1,648	41.5	-17.0
2006	3,254	1,836	56.4	1,418	43.6	-12.8
2007	3,426	1,885	55.0	1,541	45.0	-10.0

Table 12: Chemistry entry levels for 2003-2007

	Number and percentage entered for CSEC Chemistry					
	Total	Male	%	Female	%	Entry Gap
2003	3,597	1,671	46.5	1,926	53.5	7.0
2004	3,591	1,695	47.2	1,896	52.8	5.6
2005	4,263	1,924	45.1	2,339	54.9	9.8
2006	3,577	1,613	45.1	1,964	54.9	9.8

2007	3,590	1,630	45.4	1,960	54.6	9.2
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Table 13: Biology entry levels for 2003-2007

	Number and percentage entered for CSEC Biology					
	Total	Male	%	Female	%	Entry Gap
2003	4,903	2,109	43.0	2,794	57.0	14.0
2004	4,809	2,030	42.2	2,779	57.8	15.6
2005	5,785	2,281	39.4	3,504	60.6	21.2
2006	4,692	1,888	40.2	2,804	59.8	19.6
2007	4,352	1,767	40.6	2,585	59.4	18.8

Table 14: Integrated Science entry levels for 2003-2007

	Number and percentage entered for CSEC Integrated Science					
	Total	Male	%	Female	%	Entry Gap
2003	4,247	1,637	38.5	2,610	61.5	23.0
2004	4,149	1,637	39.5	2,512	60.5	21.0
2005	5,762	2,342	40.6	3,420	59.4	18.7
2006	3,902	1,502	38.5	2,400	61.5	23.0
2007	3,452	1,349	39.1	2,103	60.9	21.8

Table 15: Mathematics entry levels for 2003-2007

	Number and percentage entered for CSEC Mathematics					
	Total	Male	%	Female	%	Entry Gap
2003	25,272	9,965	39.4	15,307	60.6	21.2
2004	24,353	9,762	40.1	14,591	59.9	19.8
2005	28,629	11,034	38.5	17,595	61.5	22.9
2006	22,174	8,704	39.3	13,470	60.7	21.5
2007	20,952	8,479	40.5	12,473	59.5	19.1

Table 16: English (A) entry levels for 2003-2007

	Number and percentage entered for CSEC English (A)					
	Total	Male	%	Female	%	Entry Gap
2003	24,858	10,412	41.9	14,446	58.1	16.2

2004	23,994	10,044	41.9	13,950	58.1	16.2
2005	27,397	11,075	40.4	16,322	59.6	19.2
2006	21,814	9,014	41.3	12,800	58.7	17.4
2007	20,577	8,696	42.3	11,881	57.5	15.5

Table 17: Social Studies entry levels for 2003-2007

	Number and percentage entered for CSEC Social Studies					
	Total	Male	%	Female	%	Entry Gap
2003	9,199	3,750	40.8	5,449	59.2	18.4
2004	8,894	3,733	42.0	5,161	58.0	16.0
2005	11,719	4,797	40.93	6,922	59.07	18.14
2006	8,330	3,230	38.8	5,100	61.2	22.4
2007	8,233	3,355	40.8	4,878	59.2	18.4

Table 18: Spanish entry levels for 2003-2007

	Number and percentage entered for CSEC Spanish					
	Total	Male	%	Female	%	Entry Gap
2003	4,376	1,226	28.0	3,150	72.0	44.0
2004	4,092	1,191	29.1	2,901	70.9	41.8
2005	5,291	1,481	28.0	3,810	72.0	44.0
2006	4,097	1,113	27.2	2,984	72.8	45.8
2007	4,027	1,165	28.9	2,862	71.1	42.2

Achievement gaps

Data pertaining to achievement gaps for Grade 1 are presented in Tables 19-26. This analysis was done to examine in what proportions males and females accounted for the numbers of Grade 1 awarded at the highest level of the CSEC scale.

All of the achievement gaps are positive and relatively large, with the exception of those for Mathematics which are negative (indicating superior performance by males). It should be noted that achievement gaps for Physics at the Grade 1 level are all positive. This means that, although more males enter for the Physics examinations each year, the females outperform the males in the examination each year. The converse happens for Mathematics; more females enter for the examination but the males outperform the females at the Grade 1 level of certification.

Using Gorard's (2001) yardstick of considering gaps of 4 percentage points or less as insignificant, one can conclude that most of the gaps observed in the data reported here are likely to be significant.

Table 19: Physics achievement gaps for 2003-2007

	Grade 1 Physics					
	Total	Male	%	Female	%	Achievement Gap
2003	856	444	51.9	412	48.1	14.6
2004	1,031	512	49.7	519	50.3	19.1
2005	887	414	46.7	473	53.3	23.7
2006	732	339	46.3	393	53.7	20.2
2007	611	291	47.6	320	52.4	14.8

Table 20: Chemistry achievement gaps for 2003-2007

	Grade 1 Chemistry					
	Total	Male	%	Female	%	Achievement Gap
2003	431	184	42.7	247	57.3	7.5
2004	478	208	43.5	270	56.5	7.4
2005	329	133	40.4	196	59.6	9.4
2006	388	138	35.6	250	64.4	19.1
2007	682	261	38.3	421	61.7	14.3

Table 21: Biology achievement gaps for 2003-2007

	Grade 1 Biology					
	Total	Male	%	Female	%	Achievement Gap
2003	693	250	36.1	443	63.9	13.9
2004	783	296	37.8	487	62.2	8.8
2005	904	309	34.2	595	65.8	10.5
2006	785	269	34.3	516	65.7	11.9
2007	625	197	31.5	428	68.5	18.2

Table 22: Integrated Science achievement gaps for 2003-2007

	Grade 1 Integrated Science					
	Total	Male	%	Female	%	Achievement Gap
2003	174	49	28.2	125	71.8	20.8

2004	205	32	15.6	173	84.4	47.7
2005	256	76	29.7	180	70.3	21.9
2006	159	29	18.2	130	81.8	40.5
2007	136	34	25.0	102	75.0	28.2

Table 23: Mathematics achievement gaps for 2003-2007

	Grade 1 Mathematics					
	Total	Male	%	Female	%	Achievement Gap
2003	2,553	1,119	43.8	1,434	56.2	-8.8
2004	2,883	1,225	42.5	1,658	57.5	-4.8
2005	3,003	1,246	41.5	1,757	58.5	-5.9
2006	2,421	1,033	42.7	1,388	57.3	-6.8
2007	2,275	950	41.8	1,325	58.2	-2.6

Table 24: English (A) achievement gaps for 2003-2007

	Grade 1 English (A)					
	Total	Male	%	Female	%	Achievement Gap
2003	3,417	1,134	33.2	2,283	66.8	17.4
2004	4,284	1,455	34.0	2,829	66.0	15.8
2005	4,706	1,451	30.8	3,255	69.2	19.2
2006	3,469	1,103	31.8	2,366	68.2	19.1
2007	2,612	797	30.5	1,815	69.5	23.5

Table 25: Social Studies achievement gaps for 2003-2007

	Grade 1 Social Studies					
	Total	Male	%	Female	%	Achievement Gap
2003	946	270	28.5	676	71.5	24.4
2004	729	233	39.7	496	60.3	4.6

2005	1,232	335	27.2	897	72.8	27.5
2006	288	47	16.3	241	83.7	45.0
2007	410	96	23.4	314	76.6	34.8

Table 26: Spanish achievement gaps for 2003-2007

	Grade 1 Spanish					
	Total	Male	%	Female	%	Achievement Gap
2003	670	135	20.1	535	79.9	15.7
2004	647	167	25.8	480	74.2	6.6
2005	476	66	13.9	410	86.1	28.3
2006	732	140	19.1	590	80.6	15.8
2007	626	103	16.5	523	83.5	25.0

Summary

Practically all of the findings presented in this section of the report indicate that females are out-performing males at all levels of the school system. Earlier, the point was made that most attempts to describe male performance involve pitting the performance of males against that of females. Indeed, that was also the strategy used in this study. A more appropriate comparison could have been done if there were clearly enunciated standards for the performance of students in the various subjects at the various levels. Then, the task would be to evaluate how well both males and females met the prescribed standards. In the absence of such standards, (i) a relatively arbitrary cut-off point of 30% was used for an unacceptable performance in the SEA and 90% of the total marks was taken to represent good work, and (ii) much of the analysis had to be conducted by comparing males' performance with that of the females.

SECTION 5: FIELD WORK AND DATA ANALYSIS

Introduction

The objectives of this segment of the study were to: (a) investigate the extent to which programmes proposed by the Ministry of Education (to address underachievement of students) have been implemented in primary schools; and (b) identify other strategies explored by schools to deal with the underachievement of students. While the specific Ministry of Education programmes might target performance of students in general, the investigation sought insights on the efforts to improve the performance of boys.

Methodology

Selection of School Sites

The selection of the school sites for the study was done in consultation with Ministry of Education personnel. Five schools were selected across different educational contexts, using a purposive sampling strategy. In an effort to maintain anonymity, pseudonyms have been given to all persons and schools in the study.

Access to School Sites

Entry to the schools was facilitated by a letter from the Ministry of Education granting us permission to enter the schools to collect data. Preliminary/introductory discussions with the respective school principals were done by phone to lay foundation for field work and apprise the principals of focus of study. Dates and times for visits were also arranged by phone. One visit was made to each school site, except for one school to which two visits were made.

Data Collection and Analysis Procedures

The methods of data collection utilized in the study were interviews and classroom observations. Interviews were done with the principals and classroom teachers to obtain their views on, among other things, the use of the interventions in the schools, factors that facilitate, and inhibit, the implementation of the interventions. The interviews were audiotaped and later transcribed.

Classroom observations included the audio taping of lessons and making written notes of teacher-student interactions and non-verbal behaviors. One lesson was observed in each of the five participating schools. Interviews were also conducted after observations to obtain information/clarification on instructional methods used in the lesson and so on.

The lesson and interview transcripts were analyzed in order to identify patterns and themes in the data. Some of the data were analyzed jointly by the Principal Investigator and the field researcher on the team, while some were analyzed entirely by the field researcher. Where possible, checks were made with the principals and/or teachers to clarify points or issues that emerged in the data analysis process. The following section provides a snapshot of the interventions implemented at the five schools.

Findings

The findings are organized around the core themes that emerged in the analysis of the data, namely: the focus of the interventions; the involvement of male teachers in school life and in addressing boys' underperformance in schoolwork; factors that facilitate the implementation of the interventions; challenges to the interventions; and the outcomes of the interventions as perceived by stakeholders. In the interview excerpts, the letter "R" represents the researcher, and the letter "I" represents the person interviewed.

Focus of the Interventions

Focus on literacy problems

A common trend across the five schools was the focus on developing literacy skills of students, which was seen as an important step in helping students who are underperforming. The study found no curriculum intervention implemented by Ministry of Education, which specifically targeted the underperformance of boys. Both of Ministry of Education programmes observed – Jolly Phonics and Centre of Excellence in Teacher Training (CETT) - are designed for primary level students in general. Two of the schools were part of the CETT literacy programme. The Jolly Phonics programme which is designed to provide a foundation for reading and writing was observed at one school. Some interventions were initiated and developed by the schools themselves.

Only one school had an initiative that focused specifically on boys. The latter was explored with one group of students and involved the separation of boys and girls into two different classes. The aim was to address the underperformance of the boys as well as other aspects of their development.

The school-based initiative at one school sought to address literacy problems, and more specifically, reading problems that students might have been experiencing. According to the principal, the decision to introduce the programme was based in part on data obtained from the Ministry of Education and internal school assessments:

I: Now we looked at our SEA results as well as the National Tests, and we found that we had a literacy problem....We looked at the end-of-term results, the National Tests and so on, and we analyzed it very clinically, and we saw based on our results that we needed to have this programme.

R: Where were the weaknesses, based on your analysis?

I: In the Reading areas specifically. So it showed up a lot where they had the Comprehension. We found that the high-order questions, specifically, the children weren't able to answer them at all.

There was consensus on the importance of reading in the school curriculum, and the need to address students' problems in this area. For example, one principal emphasized:

Reading is the base for everything. So as long as they [the students] could master the reading component, you find that it will spill over into all the subject areas, because every subject is a reading subject. So if you could do comprehension and language, you could comprehend in maths - because if you have a problem in maths, you have to comprehend the problem in order to decipher what you supposed to do.

R: So do you think that is a core problem for many students?

I: For many students, for many students. You see because if the reading is a problem, then every other subject area is affected, every other subject area.

Focus on holistic development

In general, the focus at the schools seemed to be not only on the development of literacy skills and academic performance, but more broadly on the holistic development of students. This was captured in the principals' discussion of what they were seeking to achieve in their schools, for example:

Generally speaking, we are not only looking at the academics. I am looking at the holistic development of the child – the social, mental, emotional.

So the literacy programme is just one facet of a wider programme we have here....Actually, it's really four goals that focus on literacy – and they are all specific to reading – but we also need to incorporate this with our character education and values education....It's an integration that we are trying here – of character building and literacy in order to produce good young men in this particular community, and in the long term in the society of Trinidad and Tobago.

Male Teachers' Involvement in School Life

A significant finding of the study centered on the role that male teachers seem to be playing in addressing underperformance of boys, and in school life as a whole. A male teacher was a central figure in the initiative explored in one class in a mixed school. At the Standard 4 level, the boys were separated from the girls and were placed in one class to which a male teacher, was assigned. As the principal explained, this strategy sought to address, among other things, the underperformance of the boys:

We realized that a lot of them were not achieving because of what was happening in the home....Those children would have been in secondary school by our standards – they are 11 plus in Standard 3.... They were very good at sports and we tried using the sports as motivation. It worked for about 2 days and then they just went right back to their ways....They stayed with one teacher for 2 years – Standard 2 and 3. So they are now in Standard 4 and we are all, as a staff, amazed at what happened. I think it is because we put them with a male teacher....We have 2 male teachers now, out of 13 of us. I think that is normal in most schools. I think that is the problem with most of our boys who are underperforming – they don't have a role model. You know like how you had a Sir to look up to, that kind of thing.

The male teacher's description of his approach to teaching the class indicated that he apparently believed in making the learning experience interesting and relevant for his students. He said:

One of the key strategies I use, after lunch, I have a period of reading when they are allowed to bring their own reading material. If they don't have material, I give them material that they would be interested in, something they could relate to. Like most of them are interested in sports, cars, with pictures, so if they are not feeling to read, there is the visual as well....We do that 3 days for the week – Mondays, Wednesdays and Fridays. It is to get them in the habit of reading....I will bring stuff like on Brian Lara, Dwight Yorke, anything on football; they love that. I have tried this just to create the interest in reading. That is one of the key areas that they are weak in – you see that reading and also the spelling....Reading is important for all the subject areas....Reading and Comprehension are areas that they are very weak in. When we look at our results in National Tests and in SEA, we realize the Comprehension is a very weak area. So I really focus a lot on Comprehension, and helping them to develop the skills, for example, identifying the main idea, inferring and so on. Again, I try to use passages and materials that they could relate to, you know, part of their experience.

At another school the male teachers were responsible for the mentoring the boys “across the board”:

Well in addition to that programme, what we have started to do, I have asked the male teachers – we have five – to look at the boys, to mentor the boys, to take those boys and talk with them. Because once you have a literacy problem, based on what we have observed here, those are the same children who tend to have behavioral problems. So we have the male teachers working with them as well. Ever so often, they will have little sessions with them – speak with them and show them the importance of their education, the importance of having a good character. So the men are responsible for the boys. We have made them responsible for the boys across the board. So sometimes after assembly, instead of the boys proceeding to their classes, the male teachers will say “okay boys, proceed to the multi-purpose hall. This morning we are having a session with you all.”

In contrast to the schools described above, the involvement of male teachers at another school appeared to be somewhat different. Describing the challenges faced at the school, the principal lamented:

One of them [challenges], to be candid, is having the male teachers on staff to be a little more assertive....There are 5 of them. We have 19 teachers in all and 256 boys. We are fortunate to have 5 male teachers because there are some boy schools where they don't have any other than maybe the principal. And I keep asking them to be a little more assertive so that the boys will see them as role models. If my men could be a little more assertive, I think the implementation of the change would be proceeding at an even faster rate. [Principal]

Factors that Facilitate Implementation of the Interventions

A number of factors seemed to facilitate the implementation of the interventions in some of the schools. These factors included: stakeholders who played supporting roles in and out of the school; the training of persons involved in the interventions; the availability and use of appropriate teaching/learning resources; and the creation of learning environments that are conducive to learning.

Stakeholders in and out of school

The two CETT schools in the study each had a coordinator who was responsible for coordinating the activities of the programme. As one of the coordinators explained:

Since CETT started about two or three years ago, I have been the coordinator for CETT at the school. I have been responsible for coordinating the meetings with the CETT teachers so far....We have about five teachers for the most in the CETT programme in literacy faculty - for the most at one time....Our meetings are usually impromptu. We don't follow a rigid agenda. We look at what the problems are, and we share about some of the things that we have been doing in the classroom - as CETT will say 'best practices.' And we try to assist each other in whatever way we can, maybe with some literature, or strategy that one person hasn't tried as yet. We try it, we implement it, and as best as we can record our findings. [Teacher]

At another school, the senior teacher was in charge of the implementation of the Jolly Phonics programme. The placement of the senior teacher in the Infant department required rearrangements in the staff, as the principal pointed out:

I had her in Standard 4 but I did a shift of the staff....and I put her in the Infant department. So I've strengthened that department. I put my strong teacher there because I believe reading is the key to it all. [Principal]

Similarly, at another, internal adjustments were made in order to assign a teacher responsibility for the initiative. The principal gave an insight into the logistics involved in the adjustments:

Now we did not have a teacher as such to start the programme with. No teacher was free; everybody had a class to take care of. So what I did for our intake for the year before last year, we limited the number of children that we were taking in. So we only took in 2 classes. So we were able to free one teacher who did Special Ed at Training College, and has been doing lots of other courses that are aligned to Special Ed. And she has a real passion for Special Ed. So I removed her from a class, and because we only took 2 classes, we had a teacher we could have freed for her class. And now I have her doing only Special Ed – whole school programme. [Principal]

Another factor that seemingly facilitated the implementation of the intervention in at least one case was the assistance from the Ministry of Education, with whom the school sought to build “a joint partnership,” as the principal put it:

We got help from the Ministry of Education. We did get some help from South East Educational District....When we decided to construct the programme, we involved our school supervisor....I told her that we are having this problem, we have identified this problem, and this is the strategy we want to use; this is our intervention. And she said to bring her the proposal. So I took in the draft proposal and she told me to leave it with her. And she went through it to see where we could have made little adjustments and so on, and we really needed her input as well because we wanted it to be a joint partnership. [Principal]

The programme at the above-named school has also extended to other primary schools in the community as well as to the parents of the students involved in the programme. The principal spoke animatedly about the move to establish ties with the school community and the home:

We've been working with teachers from other schools who are interested – schools in the South East [District] area. We're twinning – remediation in the classroom....So we're working closely with them. They have expressed their desire to be a part of it....So again, I approached the school supervisor and asked her about the idea of twinning. She readily agreed that we should do something like that....I am sure she will see the benefits of it for the district....Somewhere between 2007 and 2008, during the Literacy month, we invited the parents of the children who are on the programme, to come in on a departmental basis. So parents who had children in the Infants department, they came one day to a workshop. In that workshop, we had films and literature showing how they could assist at home. Nice little strategies that they could use to assist the children at home. And then following that, we invited them to come and sit in the classroom in the Infant department, and watch the teachers and hear them at work. Because some of them were saying "it's fine for you to ask us to help the children at home, but we don't know how"....So that you have the school, the home, the community all working together towards this improvement. . [Principal]

In-house training of staff members

To facilitate the successful implementation of the intervention, workshops for staff members were conducted at two of the schools in the study. At one school, the workshop was conducted by the senior teacher in charge of the Jolly Phonics programme:

I also asked her [the senior teacher] to run a professional development workshop here on using the Jolly Phonics. And she taught it to the entire staff, last term. And they kept asking her questions and they were so excited by it. And some of them, even up to Standard 3, are trying it – some aspects of it. [Principal]

A workshop entitled *Making Remediation Work in the Classroom* was conducted at the school in February 2009. This workshop, which was facilitated by the special education teacher and a senior teacher at the school, was attended by teachers from other schools in the district as well as the researcher in this study. Participants at the workshop were given the opportunity to work with the framework used in the remediation programme at the school.

Environment conducive to learning

Another measure taken at one school to facilitate the implementation of the initiative was the creation of an environment which would be conducive to learning. The special education teacher expressed the belief that “remediation needs a special space to occur.” Both principal and teacher were actively involved in the preparation of an area which could enhance students’ learning:

We said, okay, we have to get a room now to facilitate the programme. So we looked at the library but it wasn’t user friendly, children friendly, for that programme. So we decided that we would have to change colors, we would refurbish it; we would...rename it a learning studio. So we spent many hours repainting, redecorating. We changed the drapery. We had no AC unit; we got a unit in the library. And then she needed other material and I gave her money to purchase whatever material she needed. We bought soft toys; we carpeted an area so that the children would be in a relaxed mood when they work. We went and bought a lot of board games – educational stuff.

On a smaller scale, the principal at another school assisted the students in their efforts to display reading materials of their choice on the classroom wall. This, she felt, might help the boys to develop the habit of reading:

We tried to give them materials that they would’ve identified with like the sporting heroes and so on. Miss didn’t use the regular reading book alone. She tried to get that sort of thing....I observed that they were cutting pictures but the pictures were of the sporting heroes and so on....They told me they like the cricket and so on. So I told them I would give them the Bristol board to organize it....I told them that I hope they are reading what they put up [on the walls]. Because they did that on their own....We just did it informally to get them to at least start to read. [Principal]

Challenges in Implementation of the Interventions

Two main factors were cited as challenges to the implementation of initiatives in the school and/or classroom. These challenges were inadequate space and the lack of training for the new teachers involved in at least one of the interventions sponsored by the Ministry of Education.

At both of the CETT schools in the study, the lack of space to mount and/or display teaching/learning materials was seen as a deterrent in the implementation of the programme. This point was articulated by the coordinators of the CETT programme in both schools observed in the study:

We have been getting a lot of materials from CETT - books, listening centres, that we have here in the computer room simply because we don’t have enough space. Our challenge is space. We don’t have enough space to really spread out and have the centres as we should....We try to use the aerial space - we have to hang up things. We make strings and run lines across. But to organize the classroom in a way that will promote all we want to do,

we just don't have that space. We usually store it in here and when we want to use it, we take it out and we use. We reorganize the classroom and then use it. [Teacher]

I think that one of the challenges we have is space....Space wise, I have a problem....The ideal thing is having the things set up. You have the listening centres there so you just go to it. But the mere fact you have to take this out of the cupboard and set it up - I see that as a challenge. [Teacher]

In general, a lot of the materials sent by the Ministry of Education to the schools appeared to be under-utilized. Boxes of materials were seen stacked on top of cupboards and in corners, while some resources were stored in the computer rooms.

Certainly, the availability of resources seemed not to be a problem for the Ministry-sponsored programmes. One principal attested to this in a discussion about the Ministry's support for the programme at her school:

Well, the Ministry of Education has provided all the books. So you have different levels and the workbooks as well, the teachers' manual and also video tapes. The Ministry provides every single thing. [Principal]

Another challenge appears to be lack of training for the new teachers involved in the CETT programme. The coordinator at one of the CETT schools commented:

We've had workshops for the first two or three years. We haven't had anything recently....As far as training - nothing. And then there are new teachers who are coming into the CETT programme who are not trained....These new teachers; they do what they have to do but how. They don't have the exposure that we have had with the training. We do have a reading specialist. She comes from time to time and speaks individually with each teacher on the CETT programme....She is attached to CETT....But we would like to see a lot more of her. Because they [CETT] are not doing much training, we need somebody to assist with the new people. Because there are some teachers who, I won't say they can't do the literacy hour, but they need some help. [Teacher]

Outcomes of the Interventions

In large part, there were positive views on the outcomes of the interventions implemented at the schools. For example, one principal noted an improvement in boys' performance which she attributed in part to the CETT programme:

Now like in my school - I am yet to bring that information up to date. Ok, you know at the end of each term you have your term test, evaluation and you analyze what the results are like. Well I am still in the process of completing my analysis but generally speaking we know that the boys are outperformed by the girls. And what is happening now - I could talk for my school - although we have the girls outperforming the boys, the boys are coming up, they are improving. The reason being well of course we are working the programme....The CETT programme. [Principal]

Another principal reported an improvement in students' performance at the Infant level, which she attributed to implementation of the Jolly Phonics programme:

The special education officer has been here very often and she told me that my Infants are working – “things are happening down there, Miss.” She has seen that and she ran some tests with them. From what she has done, she said, they [the teachers in the Jolly Phonics programme] know what they are about.

[Principal]

The principal at one school thought that noteworthy gains were made since the inception of the intervention:

It started in 2007....So it is in its second year, and we have seen tremendous benefits already.

An improvement in the students' approach to school work was noted by the principal at one school:

Yes I have seen it [improvement]....Well now I am seeing that they are organized. They are doing their work. They have not reached the point where you would say an ideal class but I would say if we did not make that intervention, I don't know what it would've been like.

With a pensive expression on her face and speaking in a positive tone, she concluded “But really and truly, improvement comes in small doses.”

Summary and Discussion

In all of the cases, the initiatives focused on the development of literacy skills as a critical step in addressing the underperformance of students in school work. Emphasis was placed not only on the improvement of academic performance, but also on the holistic development of students. Salisbury, Rees and Gorard (1999) who investigated the differential attainment of boys and girls in Britain proposed that greater focus be placed on developing the language competencies of students, particularly boys, in efforts to enhance their educational achievement. This aspect of the students' performance was a key element in this investigation.

A notable finding in this study was the wide difference in the involvement that male teachers exhibited in the development of boys and school life in general. On the one hand, there were male teachers who played a central role in the school's intervention for boys and who were actively involved in mentoring boys, while on the other, there were male teachers who apparently had little involvement in school life in general. Some argue that male teachers are better equipped to form positive relationships with boys and there is increasing advocacy for more male teachers in schools (Hyndman, 2007; Sokal & Katz, 2008). Hyndman (2007), who investigated how school culture affects boys' learning in one New Zealand primary school, argues that although it may be desirable for the teachers in a school to be representative of the

gender and cultural mix in the community it serves, the significance of an individual's gender in producing positive outcomes for boys is unclear. Interestingly, while there is much debate in the literature on the role that male teachers might, or might not, play in the boys' performance at school (Hyndman, 2007; Martino, Mills & Lingard, 2005; Sokal & Katz, 2008), little attention seems to be directed to male teachers' beliefs about their own role in the schooling of boys. Further research into this area could shed some light on, among other things, the apparent disparity in male teachers' involvement in school life that was gleaned in this study.

The separation of boys and girls into different classes was explored in only one case in the study; an arrangement that seemingly had a positive impact on the boys' work and overall behavior in school. A review of the literature reveals no consensus on the effectiveness of single-sex classes in dealing with boys' underperformance. Hyndman (2007) observes that while theories abound on how single-sex classes might be beneficial or disadvantageous to students, there is no conclusive evidence that they directly impact the primary school students' achievement in any way. Martino, Mills and Lingard (2005), who examined single-sex classes as a strategy for addressing boys' educational and social needs, concluded that ultimately teachers' knowledge and beliefs about gender play a crucial role in their pedagogical practices in single-sex classes. More in-depth research could provide a fuller understanding of this phenomenon in the local educational context.

With regard to pedagogical practices, the need to make the learning experience interesting and relevant to everyday experiences of boys was underscored in the present study. Similar findings have been reported by other researchers (Alloway, Freebody, Gilbert and Muspratt, 2002; Hyndman, 2007; Lingard, Martino, Mills, Bahr, 2002) who highlighted the need to provide real-life situations in teaching and make pedagogy more connected to the students' lives and world beyond the classroom, thereby helping to motivate boys to learn.

The findings revealed a number of factors that facilitated, and impeded, the implementation of the interventions at the school level. A collective community effort, in particular, collaboration within the schools and involvement of stakeholders outside of the schools seemed to facilitate the implementation of interventions. The provision of training through workshops, the availability of appropriate teaching/learning resources, and the creation of enabling learning environments also appeared to serve as facilitators to some interventions. On the other hand, it was felt that a lack of classroom space and training for the new teachers could impact negatively on the effectiveness of an intervention.

The findings brought to the fore two key issues that need to be considered in the implementation of interventions in schools. First, the monitoring of outcomes has been done in an informal way by stakeholders. In all of the cases, there was a lack of hard evidence and documentation of the programmes' efforts over time. This can be attributed to a number of factors, one of which might be that personnel in schools don't know how to measure and document the outcomes of

their efforts. There is a need for systematic monitoring and evaluation of programmes in order to determine the strengths, challenges and overall effectiveness. The implementation of the interventions within the framework of well-designed action research projects could help in the systematic evaluation and documentation of the outcomes. Second, a notable feature of the interventions studied was that they seemed to center around one person or a few individuals in the school setting. These findings underscored the need for systems, processes and measures to be put in place to ensure the sustainability of the interventions over time, after the initial implementers have left the institutions.

In summary, the study examined two programmes developed by the Ministry of Education to enhance students' literacy skills, and by extension students' performance in school work. These programmes - Jolly Phonics and CETT - focus on the performance of boys and girls in general. The investigation found no curriculum interventions designed by the Ministry of Education that specifically addressed the underperformance of boys in schools. If such interventions exist, they were not unearthed in this study. The investigation also revealed school-based initiatives designed to address literacy problems of students and the development of students as a whole. One of the school-based initiatives targeted the underperformance of boys, in an informal and unstructured way.

SECTION 6: CONTENT ANALYSIS OF CURRICULUM AND ASSESSMENT INSTRUMENTS

Introduction

The task of reviewing Ministry of Education policies and practices, especially with regard to curriculum and assessment, to identify those that help or hinder boys' achievement and or possibly privilege girls, assumes that gender contributes to differences in achievement. However, considerations of gender cannot alone account for performance differentials; achievement outcomes are determined by a range of factors operating in concert and dynamically. Inter alia, these factors include socio-economic status, teacher expectation, ethnic and cultural attributes, levels of intrinsic motivation and quality of educational experiences (Gipps and Murphy, 1994; Francis and Skelton 2005). Moreover the literature is inconclusive as to whether patterns of achievement are entirely attributable to gender differences. The inability to categorically correlate gender, and determine the degree of correlation, to achievement however should not obviate the need to examine curricula and assessment instruments to ensure fairness, adequacy and effectiveness. Indeed, curriculum and assessment bias can significantly impact educational outcomes (Gipps and Murphy 1994). Further, if the Ministry of Education is committed to the view that "all our citizens, regardless of their gender, class, culture, ethnic origin, etc, have the ability to learn and should be provided with the opportunity to develop that potential to the fullest", then educational structures, processes and artefacts, which include curriculum and assessment instruments, are not sacrosanct but rather must be interrogated with a view to minimising bias and maximising effectiveness (*Education Policy Paper (1993-2003)*, 1994).

Questions of bias should not be trained on either curriculum or assessment, as according to Murphy and Gipps (1994) "the two are intimately related". In a multicultural society, assessment policies, which are in-turn informed by curriculum, must seek excellence and equity simultaneously, or they will accomplish neither (La Celle-Peterson and Rivera 1994). Therefore both curriculum and assessment instruments must be designed with the whole learning experience of each group of students in mind.

Methodology

For the purposes of this report, content analysis was performed on the primary school curriculum (for Language Arts, Mathematics, Social Studies and Science – a total of 25 syllabi) One coder was utilised in this study and the coding matrices are to be found in the Appendix as Appendix B. This analysis was conducted to:

6. Determine the content coverage
7. Quantify the cognitive demands being made at the topic level
8. Determine the intended attitudinal impacts as may be indicated by affective outcomes
9. Identify the types and number of each type of recommended teaching strategies and classroom activities
10. Identify the types and number of each type of recommended teaching resource

Additionally, all four (4) assessment artefacts provided by the MOE have been analysed using content analysis. These assessment instruments were the National Tests 2006 for Language Arts and Mathematics, Standards 1 and 3 and were analysed to:

3. Determine the content strands being tested
4. Extent to which these content strands were tested

Data gathered are in-turn linked to possible curriculum and assessment impacts on boys' achievement.

Findings

It is worthy to note that the structures of syllabi across disciplines vary greatly, for instance the Mathematics, Social Studies and Science curricula are neatly separated for each class level in the primary school system – thus for Infants 1, Infants 2 and Standards 1 to 5 there are separately prescribed, yet clearly linked, curricula. The case of Language Arts is substantially different, as Infants 1 and 2, Standards 1 and 2 and Standards 3, 4 and 5 have been grouped together. This lack of clarity as to which topics ought necessarily to be treated in a particular year group can lead to confusion amongst teachers assigned to different classes – it is likely that teachers can wrongly assume that particular skills were or will be treated with in “another” class. This lack of clarity can have obvious impacts on the quality of teaching and thus achievement, irrespective of gender.

Additionally, lack of commensurability among subject curricula is evident in the resources provided to teachers. The Language Arts Curriculum provides a copious number of recommended teaching strategies and teaching resources; each in separate columns. In contrast the Mathematics curricula provide ‘suggested activities’ which largely prescribe activities for students, vaguely recommend teaching strategies and imply likely teaching resources. Consider an example from the Infant 2 syllabus – “Allow students to perform subtractions by counting backwards on number line”, in this instance it is clear that students are required to learn about addition, subtraction and the relationship between these two computations (MOE 1998, 31). What is not recommended are teaching methods. Should the teacher model? Should the teacher use think aloud? Also what is implied, rather than clearly itemised, is that one resource needed for this exercise is a visual aid, namely a number line. This lack of direction can lead to very poor classroom delivery, particularly by the untrained teacher.

This disconnect in structure and detail can easily be problematic for the primary school teacher, who in the Trinidad and Tobago education system, is required to teach all subjects to his/her assigned class. It might be instructive to align the various subject curricula so that (1) there is uniformity in structure, thus (2) allowing for equal pedagogical direction and support for teachers.

Curriculum Content

Different emphases are placed on skills across syllabus levels for Language Arts. A comparison of topic distribution per skills area for the years 1 and 2 syllabus (see Figure 5) and the standards 1 and 2 syllabus (see Figure 6) reveals a shift in significant attention from reading to other language skills. At the lower primary level reading mechanics and reading comprehension are treated in fifty-four (54) topics whereas at standards 1 and 2 these two skills only account for only twelve (12) topics. Such shifts are by no means benign. Given the well documented findings of boys' low levels of interest and competence in reading generally (Figueroa 2004, Parry 2000) such a de-emphasis may compound and or result in waning interest in reading. This too has implications for girls who may also not be at appropriate levels of reading competence. Care must be taken not to view these findings as entirely straight-forward, as none of the Language Arts syllabi make recommendations as to instructional time for each topic. Thus, the amount of instructional time dedicated is entirely at the discretion of the teacher; which has obvious implications for developing language competencies.

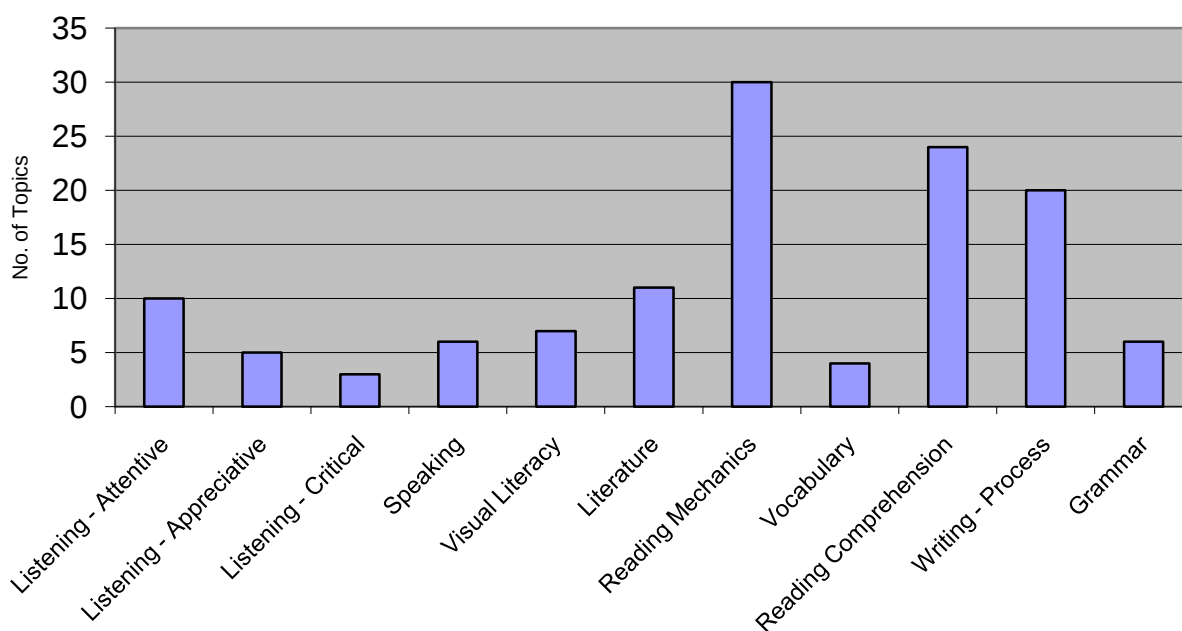


Figure 5: Distribution of Topics across Language Arts - Infant 1 & 2

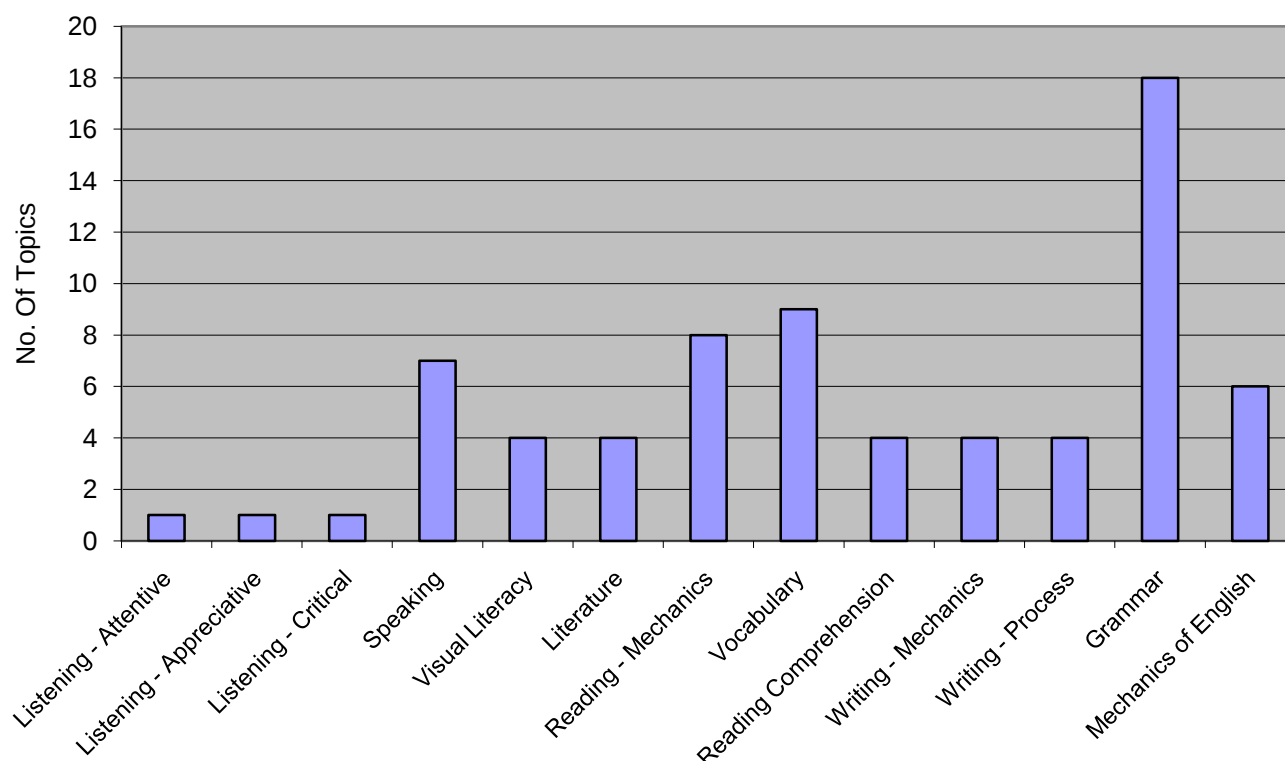


Figure 6: Distribution of Topics across Language Arts - Standards 1 & 2

The gender gap in quantitative skills, according to Sadker et al (1991), has sparked the most controversy in research on educational outcomes. In their meta-analysis of several studies across the United States, Sadker et al (1991) cite that some:

researchers have found no differences until the age of 10 (Callahan & Clements, 1984; Dossey, Mullis, Lindquist, & Chambers, 1988; McKay, 1979; Siegal, 1968). Those differences that do occur in the early years are found to favour females (Brandon, Newton, & Hammond, 1987; Hawn, Eliot, & Des Jardines, 1981; Potter & Levy, 1968; Shipman, 1972). A mixed pattern emerges in the middle school years, with slight differences in favour of girls (Tsai & Walberg, 1979), slight differences in favour of boys (Hilton & Berglund, 1974), or no differences (Connor & Serbin, 1985). Studies of highly gifted youth are exceptions, with results favouring males (Benbow & Stanley, 1980, 1982; Weiner, 1984).

Given very spotty achievement on quantitative skills, the mathematics curriculum ought to reflect sensitivity to the possibility of poor attainment of these skills at varying points in the child's development. Levels of cognitive demand are somewhat low in both the Science and Mathematics curricula, with only a few learning outcomes emerging from higher up Bloom's taxonomy (see Figures 7 and 8 below). Arguably, objectives can be tested at any level of a taxonomy, however this observation is useful as the cognitive demand of an objective does impact (1) depth of treatment of topic and thus ultimately (2) the cognitive level of assessment. The level of cognitive demand is particularly pertinent given the findings of Munns et al. (2005) that disaffected students benefitted from intellectually challenging learning experiences. It is

noteworthy, that the level of cognitive demand increases up the primary school system, as it rightly should, to reflect increasing complexity of the curriculum. These two subjects have been traditionally regarded as “male”, that is achievement in both these subjects hold social allure to boys. Therefore, particular attention should be paid to how these disciplines can be mobilised to engage boys in learning by providing appropriate levels of challenge.

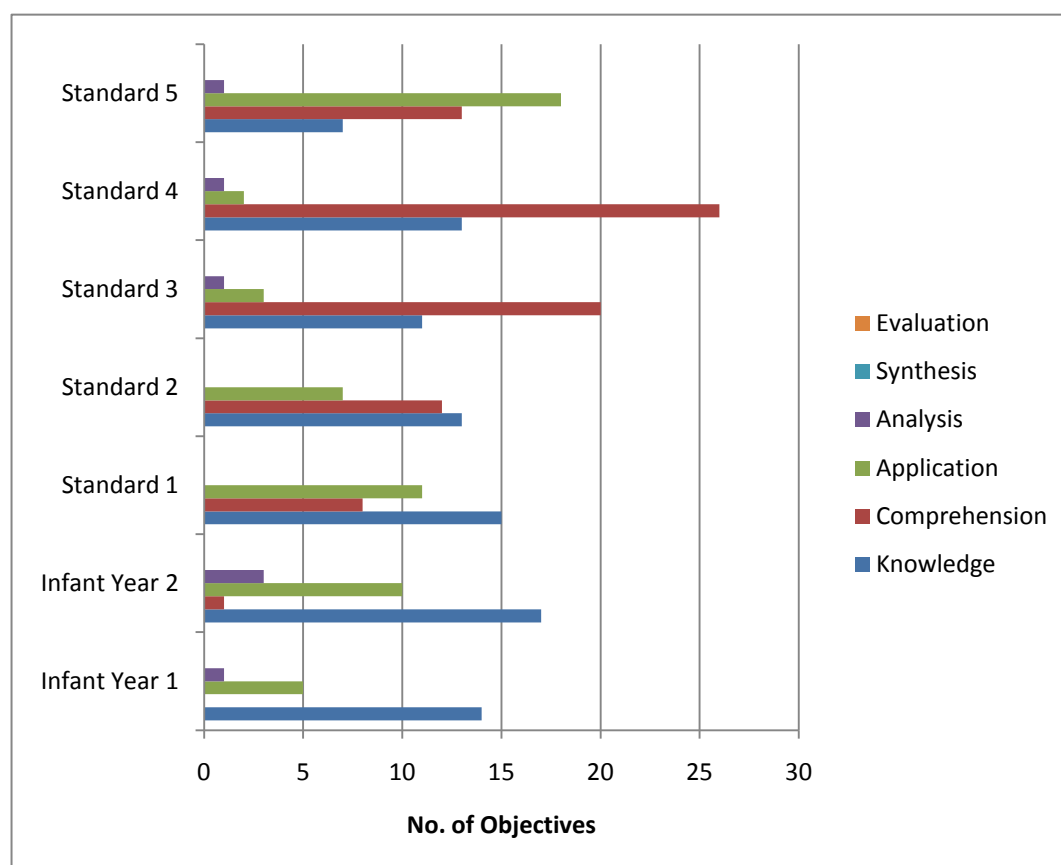


Figure 7: Cognitive Demands per Objective in the Mathematics Curriculum

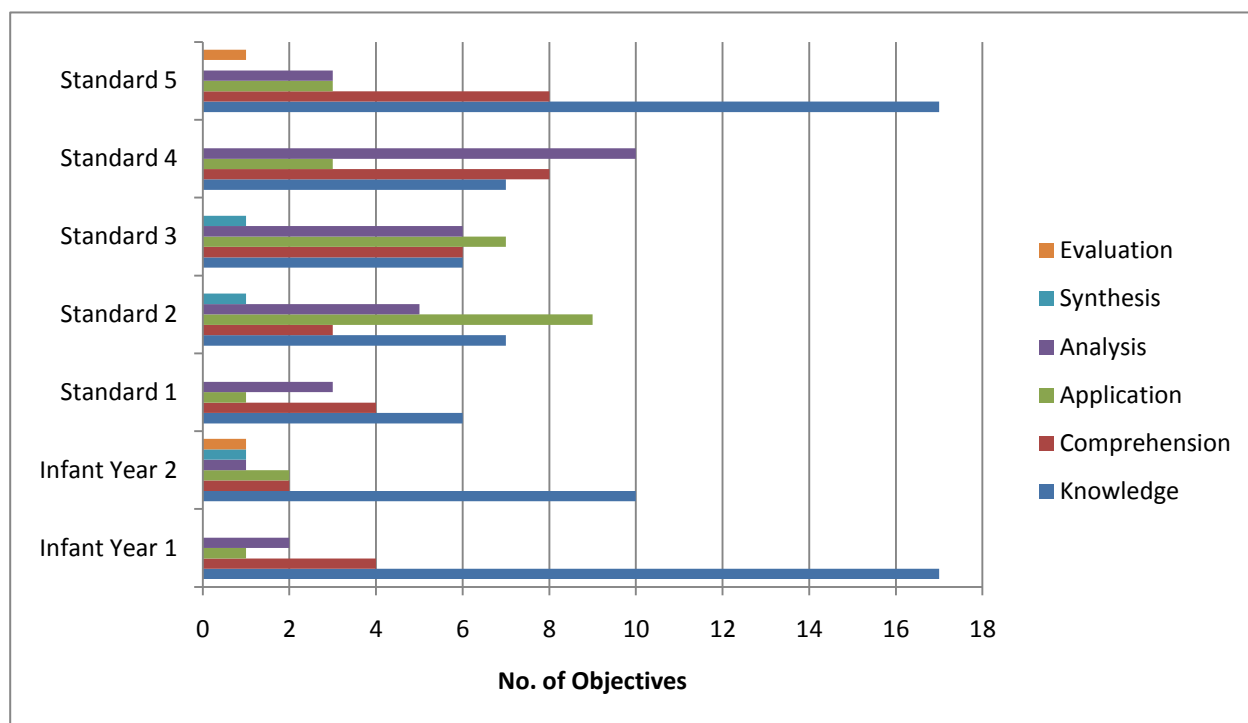


Figure 8: Cognitive Demands per Objective in the Science Curriculum

The Social Studies curriculum is organised around five central strands: Personal and Social Development, History, Geography, Citizenship and Health. Of the one-hundred and forty three (143) objectives set out in the entire Social Studies Curriculum for the primary school level, a significant portion of these impact on the affective domain (see Figure 9 below). The potential for developing appropriate attitudes is obvious and this curriculum commitment to the socialisation of the child is commendable. The Social Studies curriculum can provide many opportunities to address the very anti-school attitudes that impede learning. It is instructive that forty-one (41) objectives are subsumed under the personal and social development strand. Many of these objectives attempt to treat with understanding self, yet none specifically address understanding self as a gendered being. As such, there is a missed opportunity for both boys and girls to begin to examine a key dimension of their social identities.

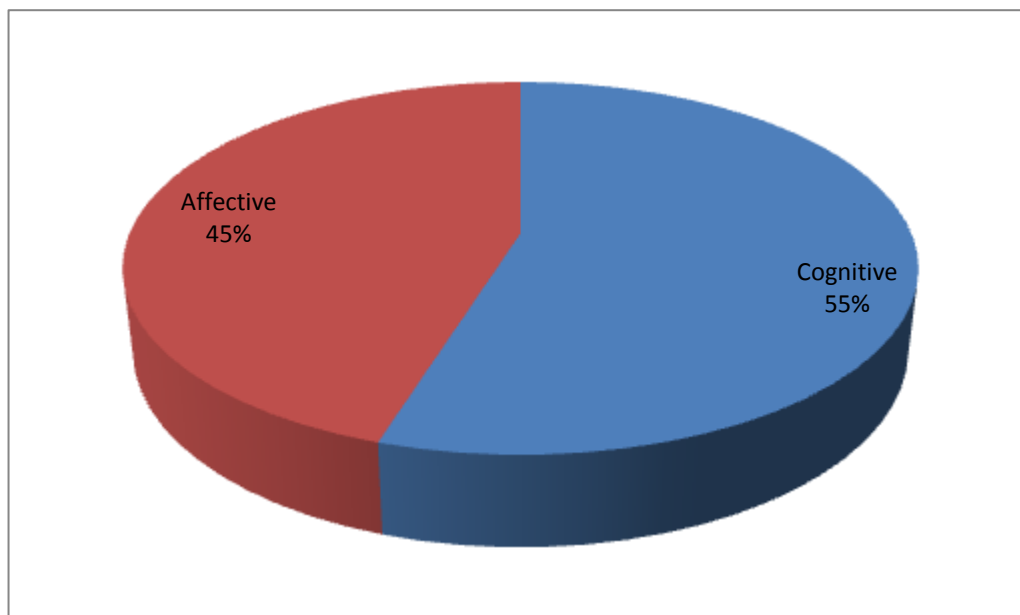


Figure 9: Percentages of Objectives in the Cognitive and Affective Domains for the Social Studies Primary School Curriculum

Whiteley (2002) suggests that issues of gender fairness in testing are “best resolved by investigation of the demands made by syllabi and modes of assessment in relation to gender differences” (p. 192). What is pertinent in this study is how curriculum content is tested. For the most part, emphases in the Language Arts curriculum correspond to emphases in the National Test (refer to Figures 10 and 11). Note that Grammar and Reading Comprehension feature highly in both the curriculum and in the assessment. What is of concern is the testing of other dimensions of language competence, in particular speaking and listening; areas that are treated with extensively in the Language Arts programme. Perhaps the National Test needs to be expanded beyond a paper-based test, as currently obtains, simply because these skills are critical to boys’ overall achievement and failure to test (at this important level of assessment) may lead to de-emphasis in building these skills. Indeed as has been noted, differentials in language arts performance are large and in favour of females. Further, the lower achievement of males in language arts varied dramatically across ability groups (De Lisle et al., 2005).

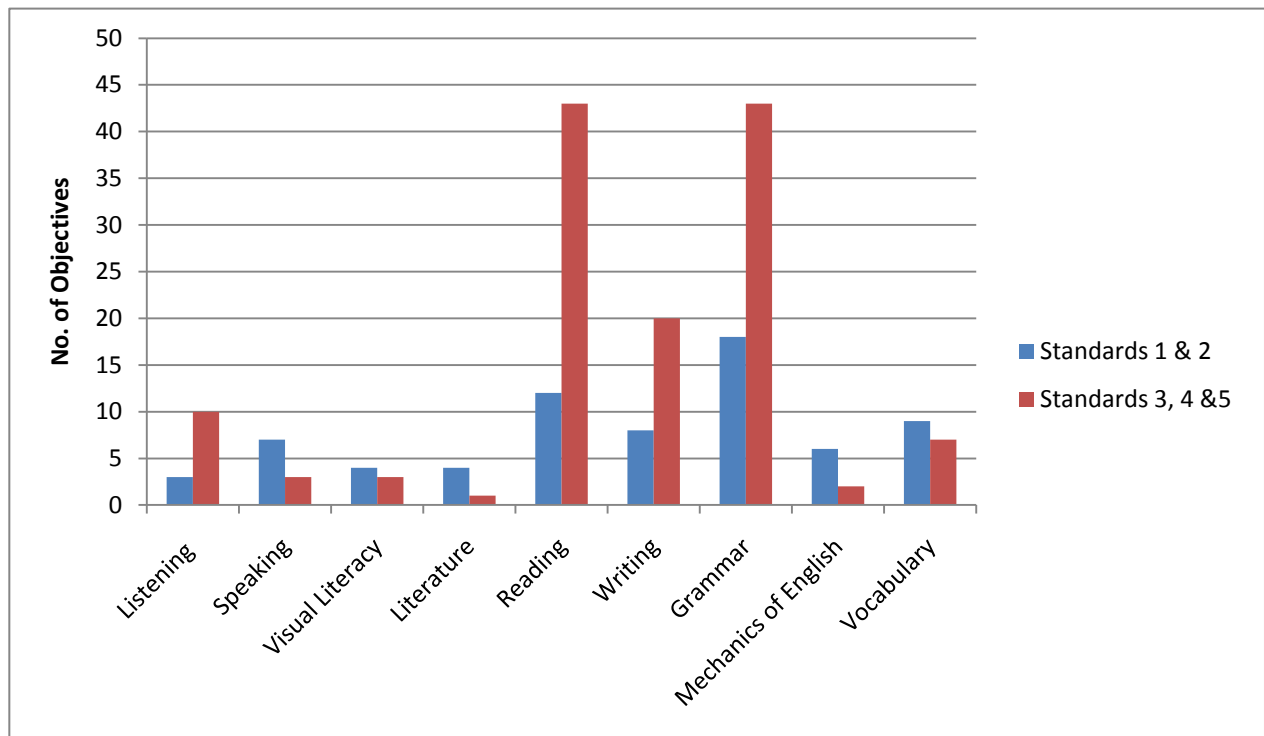


Figure 10: Distribution of Language Arts Skills

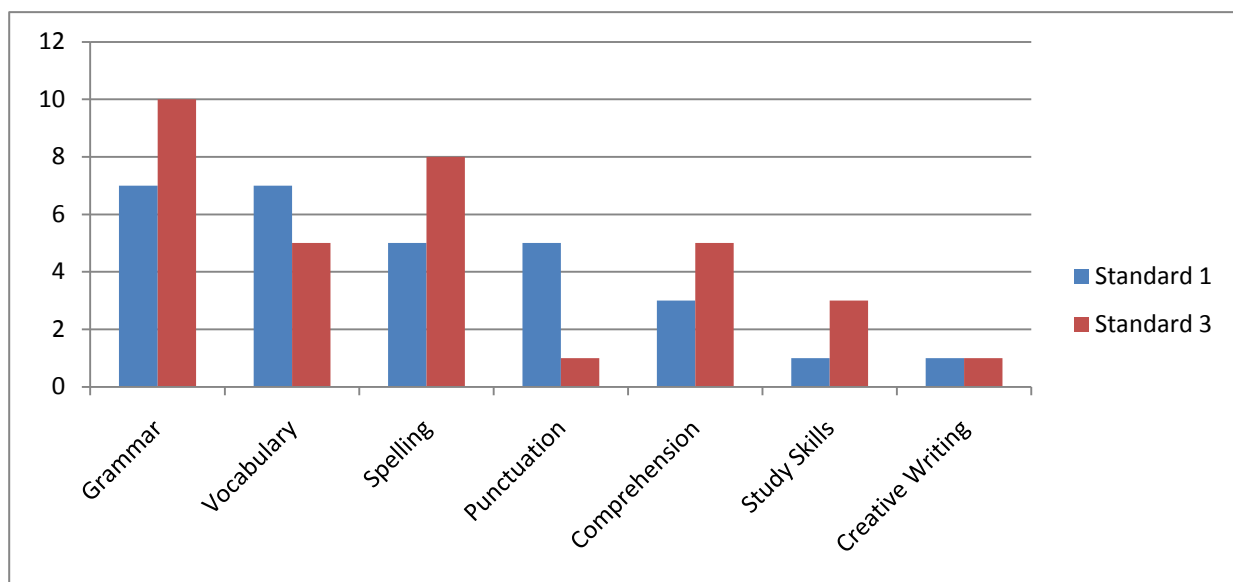


Figure 11: Content Strands Tested in the Language Arts National Test 2006

Similarly the topics receiving the most treatment in the mathematics curriculum are also well tested in the National Test at both standards 1 and 3; note in particular number, geometry and measurement (refer to Figures 12 & 13). There is thus synchrony between content treatment and adequate sampling in the test.

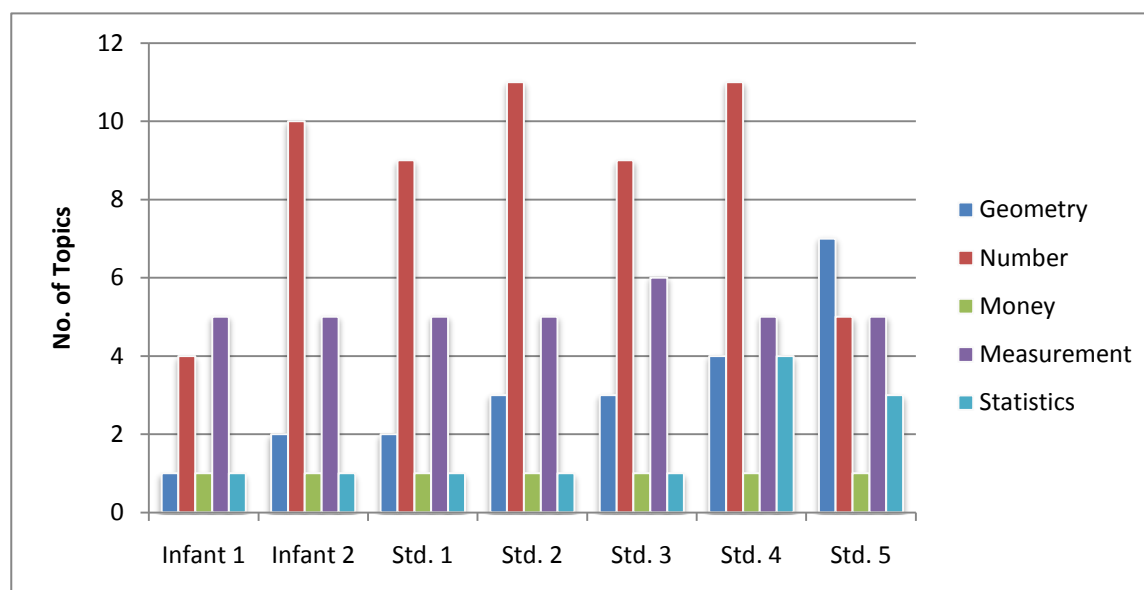


Figure 12: Distribution of Topics in Mathematics Syllabi

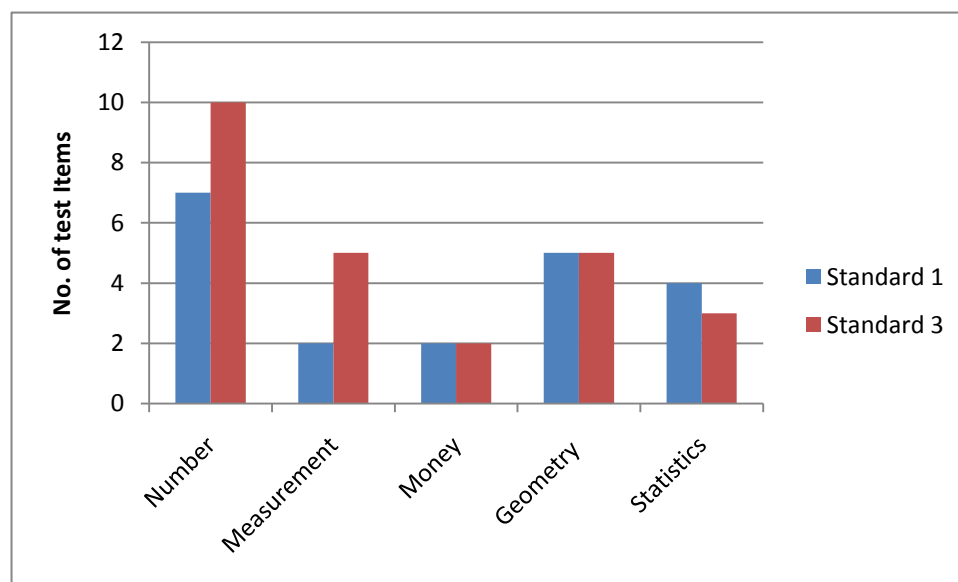


Figure 13: Content Strands Tested in the Mathematics National Test 2006

Pedagogical Prescriptions

Achievement can be significantly improved in well differentiated classrooms that cater to the diverse learning preferences of students. Some educators believe that boys have different learning styles from that of girls, and this is frequently cited as one of the causes for their underperformance in an undifferentiated classroom (Clarke, 2007; Cross, 2003; Figueroa, 2004; Hyndman, 2007). Syllabi have an important function in providing various resources to help teachers create constructivist classrooms, which facilitate meaningful teaching and learning. The Language Arts syllabi do suggest a wide array of teaching methods (see Figure 14). What is laudable is the significant use of Teacher Modeling and Teacher Read Aloud, two strategies that are particularly efficacious in the building of language arts skills.

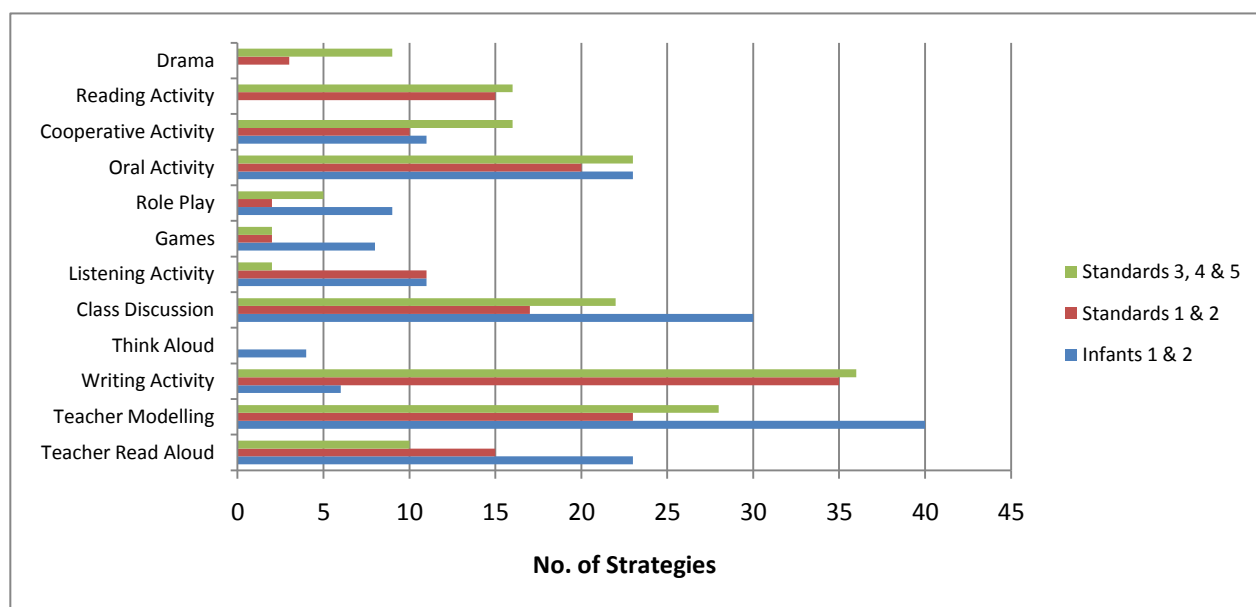


Figure 14: Recommended Teaching Strategies for Language Arts

Additionally, the syllabi's recommended mix of cooperative learning and individual work can be useful. Daniels, Creese, Hey, Leonard, and Smith (2001) found that primary school boys generally prefer individual work as opposed to "sharing." Individual activity will thus, encourage independent thought and work, but group work can benefit the building of team skills. As Kutnick et al. (1997) found, girls frequently maximize learning outcomes through corporative, homosocial bonds and this team-approach was not generally found among boys.

Equally useful was the rich list of resources prescribed for the teaching of language arts (refer to Figure 15). Chief amongst these, is an extensive list of texts, which reflect a very wide conception of 'text' - to include magazines, comic strips, posters, ephemera etc. Such a richly resourced classroom provides a variety of stimuli to meet different reading interests and preferences. A useful addition to the prescribed list would be websites, e-books and other

electronic reading material, as teachers have observed that boys have a strong interest in electronic and graphic forms of literate practice (Rowe & Rowe, 2000). Teachers should capitalise on the rich backgrounds of their students and should employ multiple texts that go beyond traditional print and as such engage their students as capable readers.

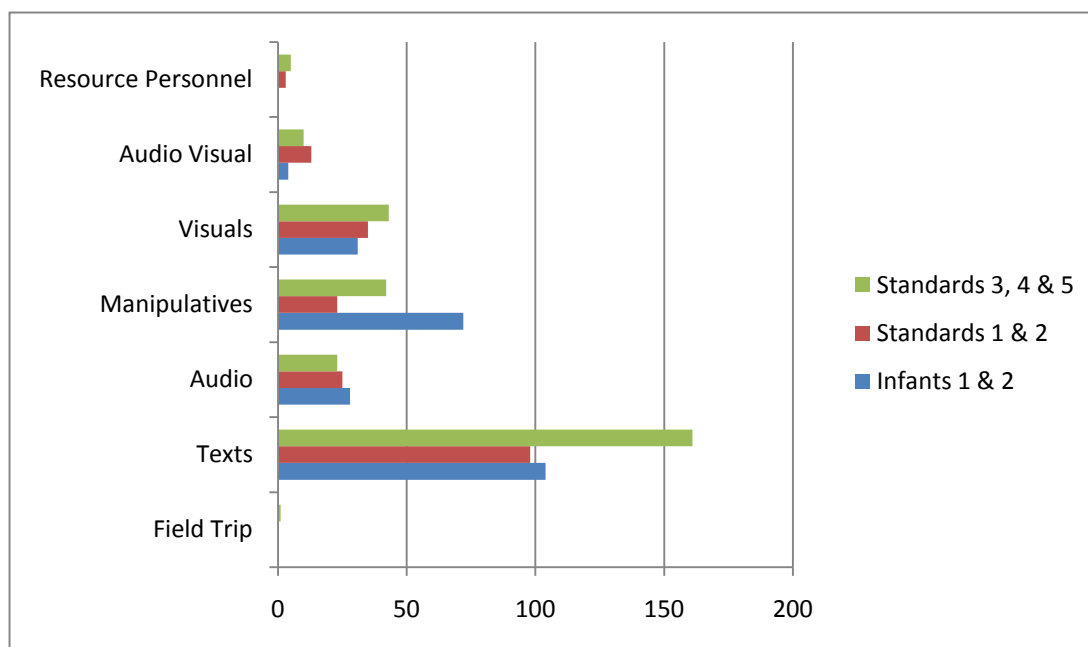


Figure 15: Suggested Teaching Resources for the Language Arts Classroom

As was previously stated the Mathematics curriculum did not lend itself to an analysis of recommended teaching strategies (as these were sometimes not stated or vague where stated). This is a serious lacuna which should be addressed to support teachers in creating meaningful, sufficiently differentiated learning experiences. Even though there was no dedicated treatment of teaching resources, it was possible to elucidate some suggested materials from the “Suggested Activities” rubric. Manipulatives were most frequently recommended for the teaching of mathematics; these were particularly linked to the teaching of counting, geometry and measurement (see Figure 16). Understandably, manipulatives help concretise abstract mathematical concepts. Of concern is the limited variety of teaching aids. In the absence of clearly recommended resources the mathematics classroom can become almost entirely didactic with little opportunity to make the subject interesting and appealing.

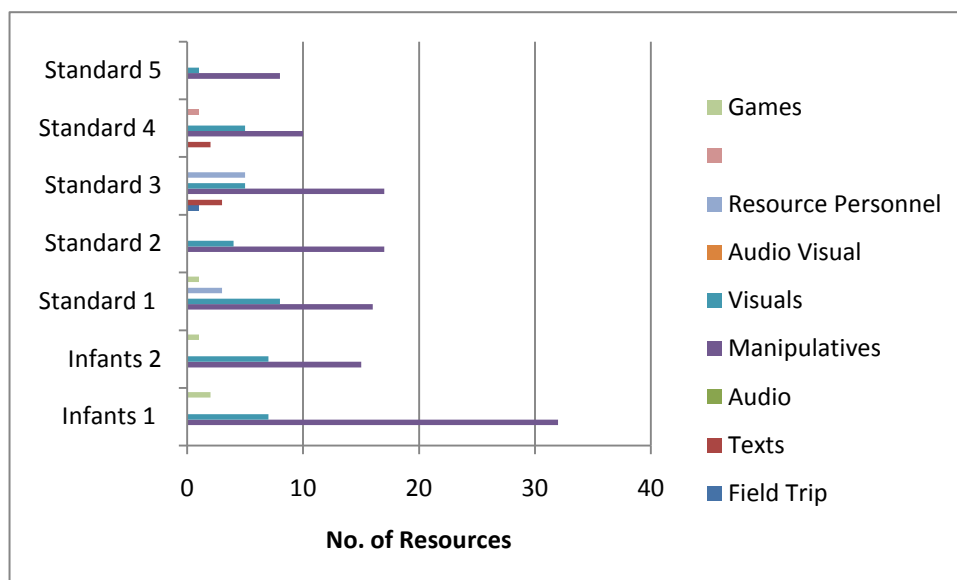


Figure 16: Suggested Teaching Resources for the Mathematics Classroom

Summary

The data gleaned in this component of the report revealed that some curricula documents do provide adequate support and guidance for improving learning outcomes and achievement. However, all curricula need to be equally comprehensive to facilitate meaningful teaching and learning experiences. A good starting point for curricula revision would be to adopt similar formats for all syllabi so that they are easier to negotiate and provide adequate guidance for teachers. Critically, separate syllabi should be drafted for each class level, not only to outline the natural progression and increasing complexity of the subject material but also to establish well delineated teaching responsibilities. Syllabi in fact function as contracts that clearly outline the scope of material to be covered at a particular level. When curricula are written for a combination of levels, then the precise scope of work becomes obfuscated.

Prescribed classroom resources need to be varied to appeal to a wide range of interests. And, teaching strategies must be highly differentiated to engage students' various learning styles, experiences and intelligences.

SECTION 7: GENERAL SUMMARY AND RECOMMENDATIONS

Following is a **summary** of the findings from the components of this study:

- The debate in the literature about male underperformance in the education system is a complex one. While some feel that there is excessive attention being paid to the phenomenon, others argue that it poses a serious threat to the stability of society.
- Not all boys are underperforming and not all girls are performing well. There is therefore need to pay attention to “which boys” and “which girls” are experiencing difficulty.
- Strategies for dealing with underperformance should take on board ways of paying attention to the individual, general classroom pedagogy, the school context and the socio-cultural background of the learner, and the involvement of the whole school.
- Education policy documents in Trinidad and Tobago portray the need to ensure learning by all students, regardless of gender.
- In Trinidad and Tobago girls are performing better than boys in nearly all examinations in the primary and secondary education sectors. Many of these differences in performance are found to be statistically significant but only some are found to be of practical significance.
- In the primary sector in Trinidad and Tobago, differences between males’ and females’ performance tend to be most marked in the area of Language Arts.
- Boys in some rural and inner city schools in Trinidad and Tobago have displayed the lowest levels of performance in all aspects of the Secondary Entrance Assessment.
- The limited classroom observations carried out indicate that initiatives aimed at addressing under-performance in local primary schools focus on both improving academic performance and promoting the holistic development of students. This is done primarily by focusing on improving the language competencies of students, particularly boys.
- The role of male teachers in the effort to enhance the performance of boys in the schools observed was not consistent. It ranged from active participation to disengagement.
- A collective community effort, collaboration within the schools and involvement of stakeholders outside of the schools seemed to facilitate the implementation of interventions. The provision of training through workshops, the availability of appropriate teaching/learning resources, and the creation of enabling learning environments also appeared to serve as facilitators to some interventions.
- Generally, interventions in the classrooms observed were not monitored in a systematic way and often only one or a few members of staff were involved in the intervention.
- There is a lack of uniformity in the way curricula for primary schools are presented. The Language Arts curriculum presents teachers with many useful examples of teaching strategies and resources that could enhance the learning of students.
- The content of the Language Arts curriculum is such that the areas of reading mechanics and reading comprehension are more heavily dealt with at the lower primary level than at Standards 1 and 2. It is unclear how this might be impacting on boys who are thought to often lack interest in reading at this level.
- The level of cognitive demand in the science and mathematics curricula seems to be low in the initial stages but, generally, this increases up the school system.

- While the Social Studies curriculum promotes the understanding of self, it does not specifically address the understanding of self as a gendered human being. This is a grave omission.
- Some skills promoted in the national curricula cannot be tested by the paper and pencil test which is the predominant form of testing in Trinidad and Tobago. Otherwise, there is a good match between skills outlined in the curricula and skills tested in the National Test.

In light of the above, the following **recommendations** are made:

7. There is the need to pay attention to the specific needs of all students, and boys in particular, in rural and inner- city schools. While the education system may set goals for where all students should be at the end of primary school, it must also be acknowledged that different students may need to travel along different roads to get there.
8. Since both the literature and the classroom studies done show that reading plays an integral role in students' performance generally, greater effort needs to be made in devising strategies to enhance the reading ability of students. The work done in the CETT programme should be built upon. Included in the thrust should be a greater use of multiple texts that go beyond traditional print, especially for boys.
9. Teachers should set high standards for all students. This might have greatest significance for boys who are under-performing. Going along with this strategy is the need to build-up the self esteem of boys. This can be achieved through implementation of a proper Health and Family Life Education curriculum in the primary schools.
10. A research project should be initiated which explores the in-school interventions to enhance the performance of boys in a selection of schools that are so involved. This should take the form of in-depth case studies that would generate rich, thick descriptions of these interventions from which lessons could be learnt for possible application in schools with similar contexts.
11. Teachers are central to any effort to enhance the performance of boys. But teachers must first understand themselves as gendered beings and that understanding must extend to an appreciation of what it means to be a girl and what it means to be a boy in their given teaching context. There is therefore the need for continuing professional development of teachers in this area, possibly through the mounting of specifically designed short courses to deal with this.
12. Stakeholders in the community should be encouraged to become more active participants in the education of boys. It is now generally accepted that a multi-sector approach is needed in the effort to deal with boys in the system who are under-performing and especially those who may be classified as being at risk.

Based on the findings of the study, a toolkit is presented next as an example of how some of the issues raised here might be tackled. It is to be stressed that the toolkit is not intended to be prescriptive.

SECTION 8: TOOLKIT

INTRODUCTION AND GENERAL FRAMEWORK FOR TOOLKIT

Boys' academic achievement is quite a complex issue, as demonstrated in the previous sections of this report. It would be imprudent to suggest that strategies for improving boys' achievement are unique. In fact if anything, the recommendations, as gleaned from the research, redound to what has generally been accepted as "good teaching" – (1) student-centeredness, (2) multipronged, whole-school approaches, (3) differentiated teachings strategies, (4) regular and meaningful action research at the classroom and school levels, and so on. Connected to this is the underlying requirement of ensuring equality in educational provisions and opportunities. As such, no strategy or intervention, aimed at improving boys' achievement, should be discriminatory toward girls. Moreover, interventions and strategies should not erode any gains, whether perceived or real, made by any particular group. As an illustrative case, consider the ostensibly 'males only' strategy implemented in a New Zealand school, as discussed by Hyndman (2007). As a means of providing meaningful social interactions between boys and adult men, the school introduced a programme entitled "Blokes Camp" where boys were taken camping. While this may be a laudable initiative, the study does not report on the fallout this may have created for girls attending that particular school – how did the girls react to this fun, adventurous exercise that excluded them? What messages is the school inadvertently sending to those excluded? What about the gendered assumptions about adventure and the outdoors as male domains and best suited to male activity only? What is evident is that due care must be taken when interventions are made. These interventions should be monitored and evaluated with a special emphasis on examining the impacts on all students, not just the target group.

Given the foregoing and other lessons learnt from the literature review, this toolkit has been designed to emphasize multi-sector, best practice approaches that target different dimensions of the education process. It should be noted that the toolkit is not intended to be exhaustive, nor is it intended to be seen as the panacea for all the gender-related challenges being faced in the various sub-contexts in primary schools in Trinidad and Tobago. Rather, the intention is to provide teachers and other interested stakeholders with some strategies that have been proven to be useful. In some instances, the toolkit may well serve to remind teachers of strategies to which they may have been exposed previously and which they may be encouraged to revisit.

Drawing in part on frameworks used by Wilson (2003) and Younger and Warrington (2005), the toolkit focuses on strategies in three broad frames:

- **Pedagogic/instructional** : Classroom-based approaches on teaching and learning. This also includes strategies that focus on the individual student
- **Socio-cultural**: Approaches that focus on the context for learning and which take cognisance of students' background cultural experiences.
- **Organizational**: Ways of organizing learning at the whole school level

A general exposition is provided on each of these frames and examples are given of how the frame might be used in the teaching/learning milieu to enhance learning, especially by boys. Overall, the intention is to provide teachers and other stakeholders with **examples** of how gender issues in education might be addressed in ways that will lead to greater participation by all, especially the boys. It is hoped that teachers/stakeholders will be able to build on the material presented here and devise further strategies that are more specifically targeted to their school contexts.

PEDAGOGICAL/INSTRUCTIONAL FRAME

Introduction

Many educators believe that boys have a unique style of learning which is different from that of girls, and underperformance in an undifferentiated classroom is frequently cited as one of the causes for boys' disaffection in the classroom (Clarke, 2007; Cross, 2003; Figueroa, 2004; Hyndman, 2007). Additionally, Munns et al. (2005) found that such students benefitted from pedagogies that engage their worldly interests and provide suitable challenges.

In differentiated classrooms, teachers build on the premise that learners differ in important ways. Thus, they acknowledge the need to engage students in instruction through different learning modalities, by appealing to the differing interests, and by varying the pace and complexity of instruction (Tomlinson, 1999). Essentially, teachers in differentiated classrooms recognize and plan for the fact that learners bring many similarities to school, but that learners also bring fundamental differences that make them individuals.

The literature (Munns et al, 2005; Tomlinson, 1999) identifies a number of practices that characterize teaching in differentiated classrooms, for example:

- use of a range of instructional strategies to cater for the diverse learning styles and abilities
- use of a variety of assessment modes to provide students with a range of opportunities to demonstrate competence and ability
- use of tools such as interest inventories to help select teaching/learning materials that are appealing to students.

The pedagogical/instructional frame draws on principles of differentiated instruction as well as guidelines for improving boys' literacy skills proposed by Booth (2002), Brozo (2002) and the Ontario Ministry of Education (2006).

The frame comprises two broad components:

- Designing literacy experiences/activities for boys
- Building a literacy community.

DESIGNING LITERACY EXPERIENCES/ACTIVITIES FOR BOYS

The first component focuses on four areas that are considered to be important in structuring literacy experiences/activities for boys:

- modeling and demonstrating literacy strategies
- recognizing inquiry as a central motivation for reading and learning
- discovering boys' out-of-school interests
- bringing critical literacy skills into the classroom
- using appropriate assessment strategies for boys.

Modeling and Demonstrating Literacy Strategies

We need to model and demonstrate specific literacy strategies so that boys can learn the 'secret' of what happens when we read and write. We need to examine processes that are often hidden or left unspoken and make them clear and explicit. By uncovering the processes that good readers often use unconsciously – that is, by teaching them explicitly – teachers can let boys into the secret. Classrooms need to be filled with relevant and functional literacy demonstrations. Three suggestions are given below:

Thinking aloud: Select a short text that will enable you to say aloud what you are thinking as you read it. You might begin with a sight piece that will give the students an authentic picture of how readers read. You can give students a copy of the text to follow along. Choose a piece that will focus on a particular strategy that you think the students need to develop.

Reading aloud: Read aloud with expression so that students can hear how a capable and fluent reader sounds. Reading aloud by the teacher allows the boys to see the pleasure that could be derived from reading. Show enjoyment by using your voice and body to bring the story or piece you are reading alive.

Conducting mini-lessons: A mini-lesson is a brief, focused lesson that allows us to demonstrate or teach a specific skill or idea in a short, purposeful manner. Reading, writing or thinking strategies can all be demonstrated through mini-lessons, which are often based on the needs of the learners. Mini-lessons are also useful for reviewing classroom procedures and to illustrate ways of thinking about what one has read.

Bear in mind that content mini-lessons are most effective when delivered to small groups of students. For mini-lessons dealing with topics that students refer to very often (for example, punctuation), you can create a chart which can be displayed on the classroom wall for students' reference.

Recognizing Inquiry as a Central Motivation for Reading and Writing

We need to recognize inquiry as the basis for drawing boys into authentic reading and writing activities using different genres of non-fiction resources. Investigations can be generated from a topic or issue drawn from the boys' own interests or an area of the curriculum that they might want to explore. Some aspects of the research may be assigned as homework, but the classroom is the best place for identifying a topic, formulating questions, and developing a research plan. Long-term research projects provide an opportunity for students to become immersed in authentic reading and writing experiences. The teacher's role is to help maintain the students' interests and sustain their efforts by creating well structured goals, schedules and timelines. Suggestions for using research to develop boys' reading and writing are given below.

Allowing interests to drive classroom research: structuring units of work around critical questions that are generated by the students provides a useful framework for teaching important concepts, strategies and skills. The energy that boys spend on classroom projects in which they feel ownership grows as they work on what they consider meaningful and important. Sustained engagement involves a deep exploration of ideas, drawing on the experiences of the students themselves as they construct their own learning.

Helping boys organize information: Boys often need help in planning how to organize information they have gathered in their research. We can help them through: (a) mini demonstration lessons; (b) samples of students' work; (c) opportunities for sharing their research questions and data with a classmate or a small study group.

Sharing and presenting the findings: presenting the findings provides opportunities for boys to practise oral communication and make written and visual representations of their research.

Discovering Boys' Out-of-School Interests

To address and/or eradicate boys' difficulty with reading and learning, teachers must try to discover boys' interests and familiarize themselves with quality books related to those interests. Teachers should first find out what boys' interests are outside of school in order to introduce them – particularly the struggling and reluctant readers – to appealing literature. Two commonly used strategies for learning about students' out-of-school interests are interest inventories and interest journals.

Interest inventories: Interest inventories are easy to construct and easy to fill in, making them useful tools for identifying students' interests. An example of an interest inventory that could be useful in a local classroom setting is given in the box below. You can create your own interest inventory to cater to the unique interests of children in your school or area.

Sample Interest Inventory

Instructions: Circle the number that matches your feelings about the activities.

Activity	Very interested	Good	Okay	Not interested
1. Playing sports	4	3	2	1
2. Watching TV	4	3	2	1
3. Playing video games	4	3	2	1
4. Listening to music	4	3	2	1
5. Playing steel pan	4	3	2	1
6. Walking on stilts	4	3	2	1
7. Catching birds	4	3	2	1
8. Riding bikes	4	3	2	1
9. Skateboarding	4	3	2	1
10. Spinning tops	4	3	2	1
11. Flying kites	4	3	2	1
12. Catching fish	4	3	2	1
13. Pitching ,marbles	4	3	2	1

Please add your favourite activities in the space below.

Interest journals: Another way to gain insight into the worlds of boys is through the use of interest journals. Essentially, interest journals are a form of journal keeping in which students write about topics of interest to them. On a cautionary note, teachers need to bear in mind that boys often find journal exercises that require them to express their feelings much more difficult than girls do.

Teachers who use interest journals often design activities in a way that provides opportunities for classmates or the teacher to respond interactively to the students' journals and entries. These are sometimes referred to as dialogue journals. This approach makes journal keeping ideally suited for discovering boys' likes and dislikes. Additionally, the journal is a useful tool for assessing students' development in writing over time, for example, a school term or school year.

Bringing Critical Literacy Skills into the Classroom

Critical literacy, the practice of exploring and interrogating the underlying assumptions in texts or works, is a key tool for helping boys and girls to "read" their world. For example, this practice helps them to become more aware of how various writings portray individuals, groups and issues. The work involved in critical literacy can be appealing to boys and their enjoyment of figuring things out. In teaching critical literacy, the teacher must encourage and be prepared for healthy intellectual challenges. For many boys, intellectual argument is a way of demonstrating their interest and engagement in an issue or subject.

Below are examples questions that you can ask students to stimulate the development of their critical literacy skills. These questions apply to most spoken, written, visual and printed texts.

Sample questions for stimulating critical literacy development:

- What is the text about?
- Who would most likely read/view this text? Why?
- How do you feel about this text?
- What does the author of this text want us to think or believe?
- How (if at all) does this text mesh with your own beliefs on the subject?
- What do the words and images convey?
- How are males and females represented in this text?
- How is the family portrayed in this text?
- What has been omitted from this text?
- How are different groups represented in this text?
- Does a particular group benefit from this text? If so, which group or groups?

Using Appropriate Assessment Strategies for Boys

- *Helping boys to self-evaluate:* We need to develop assessment strategies that would enable boys to recognize their strengths and weaknesses, and support their literacy growth. We should assess all areas of a boy's development in literacy, including: the kinds of books he reads, the amount read, the degree of enjoyment derived from reading, the ability to reflect on learning, and the ability to assess personal reading growth.
- *Use of rubrics:* Teachers need to provide rubrics for assessment in advance and apprise students of the role that they need to play in shaping their reading programme. Boys should be encouraged to monitor their own learning, reflect on their reading, identify areas in which they feel confident and skills they need to improve, and engage in peer and self-assessments.
- *Range of assessment formats:* To adequately assess boys' development in reading, writing and learning in general, teachers need to explore a range of assessment formats apart from the traditional paper-and-pencil tests. Information on processes of learning can be obtained using strategies such as learning logs, think-aloud observation sessions and self-assessment checklists. Other strategies such as portfolios, journals and oral presentations can provide valuable information on both processes and products of students' learning. **For boys (and girls) who are struggling to read and write, an oral presentation might assist them to display what they know.**

Practice sessions: Some boys do not perform well on tests that require inferences and personal responses. Practice sessions using the types of texts and questions boys will encounter in tests are useful. If we structure these sessions carefully and integrate them into regular classroom work, we can help boys to perform better in formal test conditions.

BUILDING A LITERACY COMMUNITY

The second component of the pedagogical/instructional frame relate to the need for: (a) connecting the home, the school and the community; and (b) building literacy and literature resources for boys.

Connecting the Home, the School and the Community

We need to integrate the home and school worlds of every boy so that parents and caregivers can work together with the school in supporting literacy for all children. Share ideas with colleagues and follow children's progress from year to year. Make it a policy to provide guidance for each child for the whole of his/her school life. Here are two examples of the role that parents could play in developing children's literacy ability.

Collaborating with parents:

Teachers need to explore realistic collaborative ways for working with parents. By listening to parents, we can discover a lot about literacy in their homes and incorporate that knowledge into the programmes that we design for their children. However, we must remember that most parents are not trained teachers and that reading and writing experiences at home should be natural and encouraging.

Homework is often a challenging time for boys struggling with literacy. We need to be aware of the demands we place on these learners, and offer parents specific and clear suggestions to enable them to understand the assigned tasks and how those tasks would enhance reading and writing skills.

Parenting sons:

Parents have an important role to play in strengthening boys' literacy. They need to find books that might interest boys. Try to make links to the popular cultural icons they already value. Value and respect boys' responses, and find ways to extend and deepen them.

Building Literacy and Literature Resources for Boys

A number of factors determine what materials boys read. Boys' reading interests are influenced by their age, gender, culture, reading ability, background, parents, peers, availability of materials, and the media. Consideration must be given to the choice of teaching methods and materials, if we want to help boys to see reading as an authentic and useful life process. Suggestions for building appropriate resources are provided in the following box:

Providing opportunities for interaction and sharing:

Classroom activities that encourage sharing of books and reading experiences can promote reading. Boys can become aware of different literacy materials through peer group interactions and discover new books of interest in book talks delivered by teachers, librarians and other students.

Teachers can explore literature circles, wherein the small-group discussion format provides a nurturing and supportive environment for both students and teachers to engage in meaningful talk about the text being read.

Exciting boys to read:

With the wealth of children's books available today, no boy should begin reading with limited, meaningless readers. Depending on the experiences of the child, books for the beginning reader can explore and depict all aspects of life and language. Look for the popular ready-to-read series for boys. Ready-to-read books give young readers the opportunity to sustain their reading over a longer period of time. Whether the book is a series of short stories about the same characters, or chapters that make up a complete story, it would give children a chance to anticipate and predict – key operations in reading. As incidents and images grow one upon the other, children construct a larger framework for understanding and may come to experience the satisfaction that comes with reading longer texts.

Moving to novels:

First novels mark a reading milestone for young independent readers, now able to sustain their interest over several chapters, make sense of plot and characters, and find aesthetic pleasure in the wholeness of a story. Boys may enjoy reading a series of novels by one author and discover more about familiar characters. Or they may read many novels on a theme such as mystery, humor or a favorite sport. Boys should not be pushed into reading novels that do not interest them or that they find too difficult, for success in this phase of their reading development could determine their future as readers.

Some boys with well developed reading abilities and interests may want to move to adult novels early. There are books especially written for the proficient young readers. Such books allow boys to stretch their minds and imagination and present them with opportunities for deeper learning.

[Works by Booth (2002), Brozo (2002) and the Ontario Ministry of Education (2006), have been drawn upon in presenting the ideas above].

SOCIO-CULTURAL FRAME

Introduction

Children do not come to the classroom with empty minds. They bring with them knowledge, skills and values that have been developed by growing up in their various cultural settings. Schools, too, have their own cultural norms and values. Teachers need to be aware of these influences that can impact on the learning by students. As demonstrated in the literature presented in this report, students can be motivated to engage in learning if the teaching/learning milieu incorporates their real-life experiences. Some of the ways in which it is recommended that the socio-cultural frame can be used to impact positively on student learning are given in the box below.

USING A SOCIO-CULTURAL FRAME IN TEACHING

Incorporate aspects of students' socio-cultural background in the teaching/learning situation across the curriculum. This can be applied across all social contexts but is particularly relevant in rural areas where the socio-cultural knowledge is likely to be shaped in ways that are different from traditional school knowledge. This component of the frame is illustrated in the examples given below.

Be cognisant of prevailing socio-cultural views when planning strategies for disciplining students, especially boys. Parry (2000) found that the widespread use of harmful strategies for disciplining boys, such as sarcasm and ridicule, is justified (by those who are so engaged) by the belief that boys are more resilient and less sensitive than girls. Views such as these should be thoroughly interrogated and schools should encourage a participatory approach involving staff, parents and students in developing a discipline matrix which itemises appropriate sanctions for various types of indiscipline.

Use the creative arts as a medium for curriculum delivery. The focus on the visual and performing arts in the schools in Trinidad and Tobago now is a welcome move. However, there should be proper curriculum adaptation to infuse pedagogical strategies that incorporate the arts, rather than simply using the arts for “shows.”

USING SOCIO-CULTURAL KNOWLEDGE IN THE PRIMARY CLASSROOM

Example 1:

This example makes use of cartoons that depict local scenes with which most primary school students in Trinidad and Tobago would be familiar. As has been pointed out earlier, greater use of multiple texts that go beyond traditional print, is to be encouraged, especially for boys. Many boys spend a lot of their spare time reading cartoons so the format should be immediately appealing to them. Two examples of locally produced cartoons are presented below:





These particular cartoons can serve as stimulus material for lessons in both Social Studies and Science classes. For example, in **Social Studies**, they can be used in lessons on:

- The environment
- The use of leisure time
- Musical forms
- Personal health
- Interpersonal and personal relationships
- Etc.

In **Science**, they can be used for lessons on:

- Properties of materials
- Sound and vibrating objects
- Forms of energy
- Noise pollution
- Personal health

This stimulus material is likely to appeal to both boys and girls and can provide the opportunity for students to share and explore their everyday experiences in the context of school work. In addition, the teacher can tap the creative abilities of students in requesting that they produce cartoons on other topics of local interest which can be incorporated into lessons in various parts of the curriculum.

Example 2:

Stimulus materials that focus on students' background knowledge and experience can take the form of newspaper clippings from the local newspapers. The clippings can be photographs and/or short narratives as illustrated below.



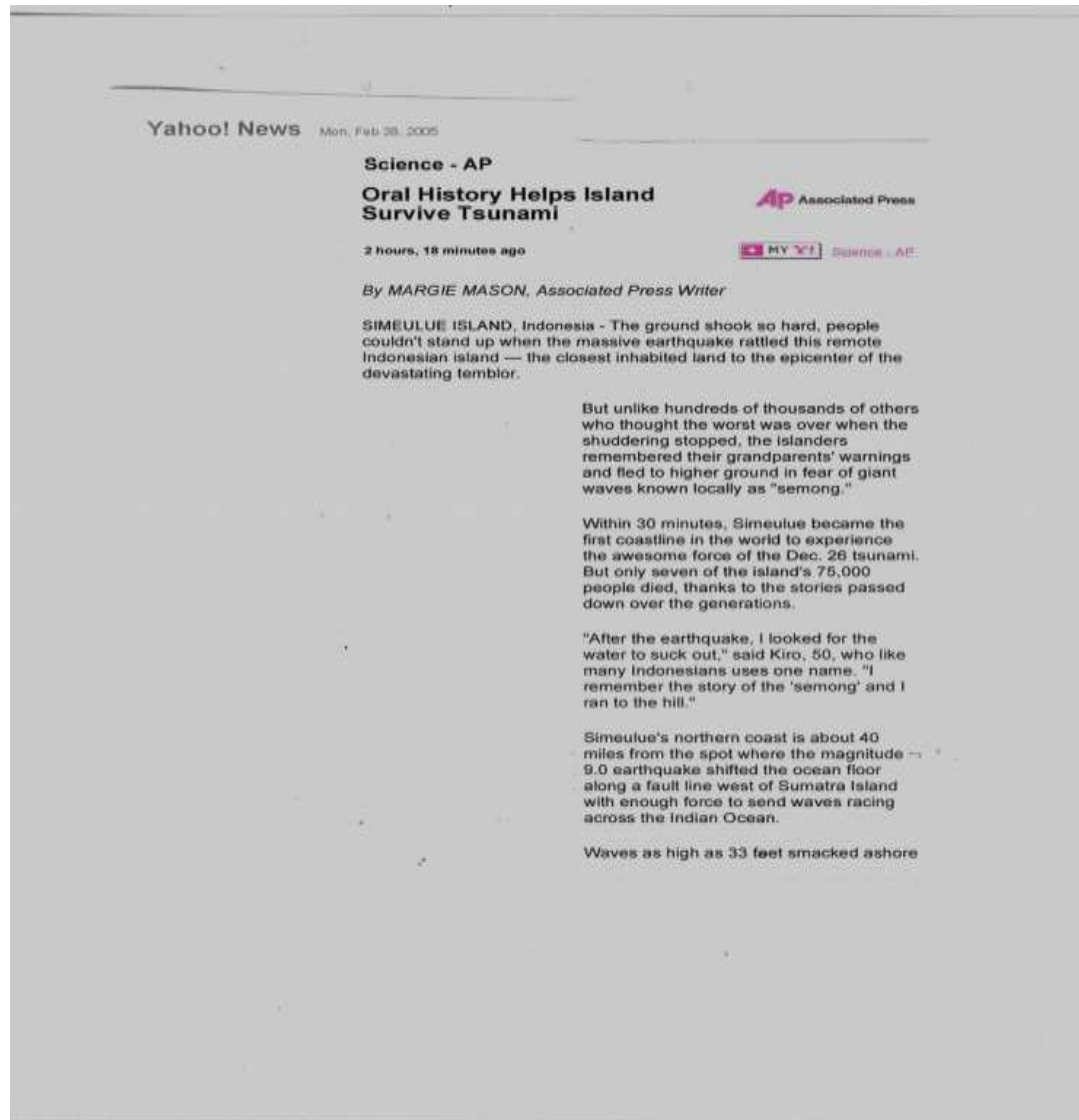
Newspaper clippings like this one from the *Trinidad Express* are likely to be particularly appealing to boys. This particular clipping can be used for an integrated lesson (or lessons) that deal with modes of transport then and now, how technologies change, technology in our local setting, machines, use of leisure time, customs now and then, and so on.

These clippings need not only be collected by the teacher. The teacher can set the class the task of finding newspaper clippings. This strategy can encourage the children to read the local newspapers and to look for items of interest that can be shared with their peers.

Newspaper clippings can also be used extensively for developing literacy skills and thus they can provide a platform for the creation of integrated lessons at the primary level.

Example 3:

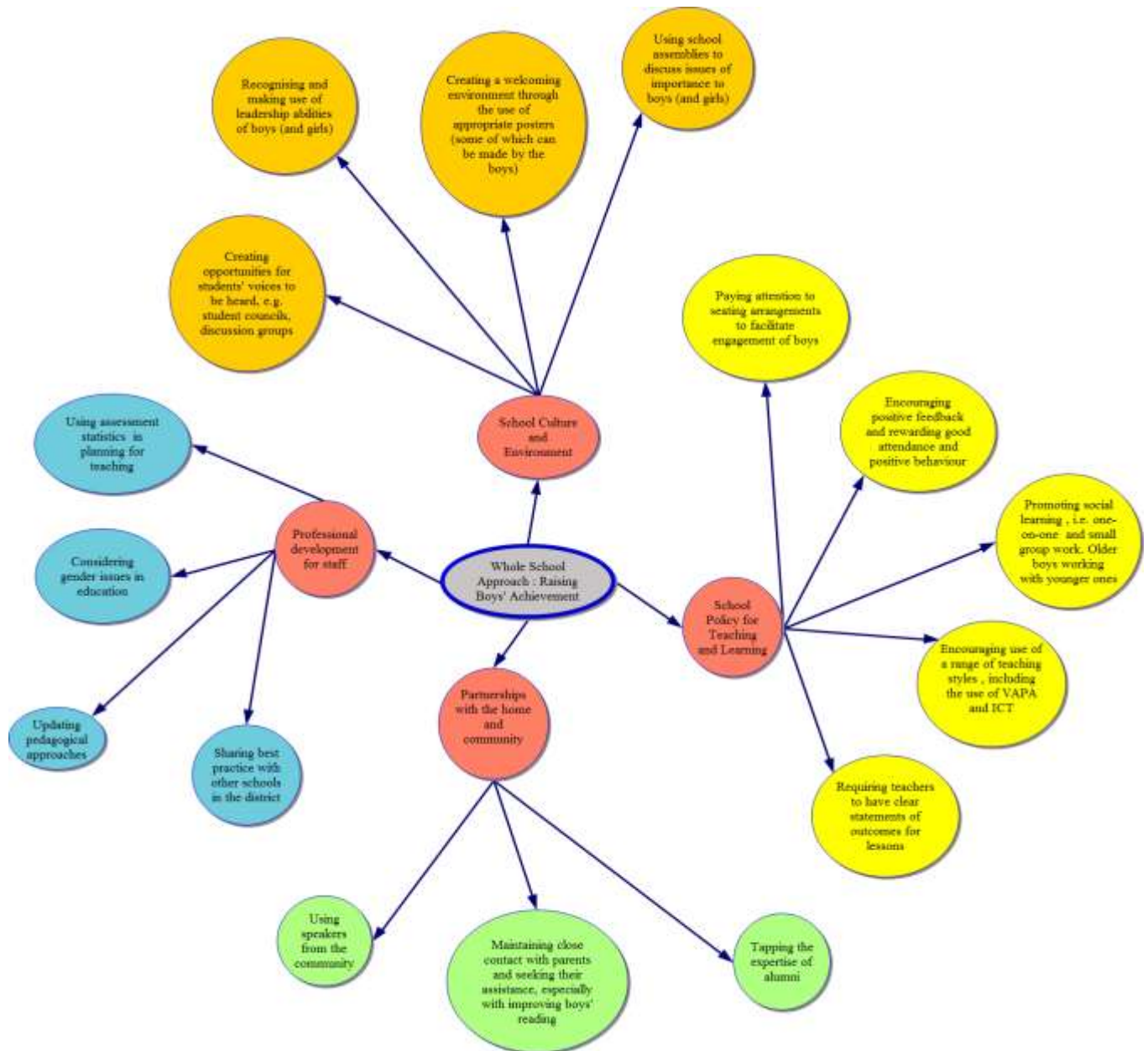
This third example illustrates how socio-cultural knowledge from another setting can be used in the local primary school setting. It also illustrates that useful teaching resources can be found on the internet. The story is about how some Indonesians survived the 2004 tsunami.



This resource can also be used for an integrated lesson that might focus on reading and new vocabulary but which can also be broadened to include consideration of family traditions across cultures, aspects of geography, a comparison of traditional and modern technology, and so on. A topic such as that dealt with in this article could even lead to the forging of links with community members who may be able to tell students about advice that has been passed down by elders in the local setting. The internet is a rich source of materials for teaching. Annotations on a few websites that focus on enhancing the performance of boys are presented towards the end of the toolkit. Following this, a glossary of gender specific terms that may be encountered in reading the literature online or otherwise is also presented.

WHOLE SCHOOL FRAME

COLLABORATE.....PLAN.....EXECUTE.....RECOGNISE.....REWARD.....CELEBRATE



The diagram overleaf shows some of the ways in which the whole school approach might be used to enhance the performance of boys, and girls as well. The central principle of this approach is that there must be buy-in from all stakeholders with respect to whatever action is embarked upon. The specific strategies mentioned in the diagram are geared towards creating situations within and outside of the classroom that would make students feel comfortable and that would enhance learning.

The idea expressed in any one of the cells in the diagram can be expanded into activities that can engage boys more successfully. Care must be taken to reward and celebrate positive behaviour and achievement on the part of both boys and girls. And at the same time, teachers need to have high expectations for those in their charge.

SOME RELEVANT WEBSITES

Boys' Learning With Dr. Peter West

Producer: Dr. Peter West

URL: <http://www.boyslearning.com.au/>

Description:

This is the official website of Dr. Peter West, formerly Head of the research group in men and families at the University of Western Sydney. He is one of Australia's best known academics, specializing in males, their health, education and relationships.

Initiatives to Raise Boys' Achievement

Producer: National Literacy Trust (UK)

URL: <http://www.literacytrust.org.uk/Database/boys/Boysinit.html>

Description:

Provides links to selected initiatives undertaken by schools, organizations, and education authorities in the UK to raise boys' achievement.

The National Strategies: Gender and Achievement

Producer: Department for Children, Schools and Families (UK)

URL: <http://nationalstrategies.standards.dcsf.gov.uk/genderandachievement/>

Description:

This materials on this site aim to provide support and information for teachers, local authorities, and parents who are trying to raise the performance and aspirations of underachieving boys and girls. The materials are intended to provide an online resource pool of best practice, analysis, and practical guidance.

Raising Boys' Achievement

Producer: Department for Education and Skills (UK)

URL: <http://www-rba.educ.cam.ac.uk/index.html>

Description:

The Raising Boys' Achievement project is looking at exciting and innovative ways of raising achievement across a range of primary, secondary and special schools. Working with over 60 schools across England, the research team aims to identify and evaluate strategies that are particularly helping in motivating boys.

Raising Boys' Achievement in Schools

Producer: Improvement Foundation (UK)

URL: <http://www.improvementfoundation.org/theme/raising-boys-achievement-in-schools>

Description:

Since 2003, the Improvement Foundation has been offering an innovative one-year National Education Breakthrough Programme to help boys achieve their potential by working to change how schools deliver teaching and manage learning.

Teaching Expertise: Raising Achievement

Producer: Optimus Professional Publishing Limited

URL: <http://www.teachingexpertise.com/topic/raising-achievement>

Description:

Teaching Expertise is a large, searchable library of free education articles, practical management and teaching resources, and blogs, written by school professionals. This the section of the site dealing with raising achievement.

What Works? Research into Practice

Producer: Ontario Ministry of Education. Literacy and Numeracy Secretariat

URL: <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/whatWorks.html>

Description:

The research summaries in this collection highlight promising teaching practice at the classroom level. Produced by a partnership between the Literacy and Numeracy Secretariat and the Ontario Association of Deans of Education, the articles are written by scholars at Ontario universities who are experts in the field of education.

DEFINITION OF KEY CONCEPTS

As teachers become more conscious of some of the gender issues that arise in the classroom situation, they should seek to gain conceptual clarity about some of the terms that are used in such situations. Following are some common gender-related terms and their meanings:

Achievement

The attainment of a specified standard of performance.

Achievement Gap

Refers to persistent differences in achievement among different types of learners as indicated by scores on standardized tests, teacher grades, and other data.

Equity

Equity in schooling is the equal access to and just distribution of benefits from the education system

Gender

Refers to the economic, social, and cultural attributes and opportunities associated with being male and female. These attributes are socially constructed and are learned through the socialization process. They differ from one cultural setting to another, and are dynamic.

Gender Bias

This is the idea that one gender is at a disadvantage compared with the other gender.

Gender Equality

This means that males and females enjoy the same status and have equal conditions for realizing their full potential and for contributing to and benefitting from economic, social, cultural, and political development. It means that males and females have equal enjoyment of goods, opportunities, resources, and rewards at home, school, and society.

Gender Equity

This is the second step towards **gender equality** in education. It involves fairness in representation, participation, and outcomes or benefits among males and females. To ensure fairness, measures must often be available to compensate historical and social disadvantages that prevent men and women from operating on a level playing field.

Gender Gap

This is often used to refer to the difference in the scores between men and women on attitudes, interests, behaviours, knowledge, and perspectives on a particular issue.

Gender Identity

A person's own sense of identification as male or female, another gender, or identifying with no gender. It is how one personally identifies his or her gender, regardless of sex characteristics.

Gender Parity

This is the first step towards achieving **gender equality** in education. It refers to a situation of proportional representation of males and females in an education system relative to the population per age group.

Gender Parity Index (GPI)

This is the ratio of female-to-male value of a given indicator. A GPI of 1 indicates parity between the sexes; a GPI that varies between 0 and 1 means a disparity in favour of boys; a GPI greater than 1 indicates a disparity in favour of girls.

Gender Roles

These are clusters of socially or culturally defined and learned expectations about how men and women relate to one another in a given social group or system. They are dictated by the society a person is living in and may vary widely within and between cultures, from generation to generation, and over time due to societal changes. People's and communities' understanding of gender roles can and do change.

Gender Socialization

Refers to patterns of behaviour taught to children and adults in order to help them to behave as acceptable males or females. It begins at birth via naming, clothing, and treatment of the infant and it continues to be taught and reinforced throughout life within most social institutions.

Gender Stereotype

This is a mental template for how each sex should look, dress, and act. It is a rigid and over-simplified definition of a group of people in which all members of that group are labelled with similar characteristics.

Gender Stereotyping

This is the act of trying to compel an individual's conformity to gender stereotypes.

Hegemonic Masculinity

Refers to the dominant, heterosexual, patriarchal, privileged masculinity that controls many aspects of people's lives. This is the most valued masculinity, which dominates other masculinities.

Hegemony

Dominance or superiority.

Masculinity

The quality or condition of being male in a given social context. Some cross-cultural elements, such as aggression, strength, and assertiveness have traditionally been considered as male characteristics.

Sex

Refers to the classification of people as male or female. It is based on biological and physical differences between men and women, as evidenced by chromosomes, body type, genitals, and physical characteristics.

Underachievement

Refers to a mismatch between current levels of attainment and potential. It occurs when a child's performance is below what is expected based on the child's ability.

*** This glossary has borrowed and adapted definitions from various sources.**

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APPENDIX

Appendix A

GENDER ISSUES IN EDUCATION AND INTERVENTION STRATEGIES TO INCREASE PARTICIPATION OF BOYS

WORKPLAN

By

June George

February 9th 2009

TASKS TO BE PERFORMED

TASK	PROPOSED PROCEDURE
Conduct a literature review of local, regional, and international research reporting on underachievement in boys, with special attention to primary and secondary levels of schooling, and of programmes to address this issue	• Identify non-Caribbean countries (especially Commonwealth countries, Latin American countries, and other countries with similar demographic, cultural, sociological, and economic environments) that have identified the underachievement of boys as an issue of concern • Conduct a search of library catalogues, online databases, and official and organizational websites to identify reports of research on male underachievement in the Caribbean and the countries identified above, with particular reference to the primary and secondary level (for the Caribbean, all research will be identified, but for other countries, only research from 1990 will be surveyed) • Prepare bibliographical records and summaries of each report identified for inclusion in the literature review, with particular reference to the problem identified, the findings, and the recommendations • Identify programmes that can serve as models and examples of best practice from the review of the literature
Analyse local statistics on the performance of boys in primary and secondary institutions and provide comparisons with other countries, both regionally and internationally	• Obtain relevant data sets from the Ministry of Education for the period 2003-2007 • Perform gender analysis of entry levels and achievement levels • Attempt (as far as the completeness of data sets permits) to identify which boys and which girls are under-achieving
Compile findings/ recommendations of past reports in Trinidad and Tobago on the subject matter, and identify recommendations already made for	• Identify official reports on the education system in Trinidad and Tobago that have included gender issues • Source such reports from relevant departments/organizations/ agencies

TASK	PROPOSED PROCEDURE
classroom teaching/instruction Review Ministry of Education policies and practices (especially with regard to curriculum, testing and assessment) to identify those that help or hinder boys' achievement and/or possible gender privilege for girls	• Identify and list findings and recommendations in these reports related to strategies for classroom teaching/instruction that would impact positively on male underachievement • Identify and source official MOE curriculum documents • Identify and source a sample of SEA and NCSE test papers • Perform content analysis on these documents using a gender framework
Conduct a number of local school and classroom observations to determine the degree of implementation of existing policies or strategies or programmes to deal with underachievement;	• Choose a purposive sample of 5 schools that are likely to provide valuable insights into strategies being used in schools to deal with issues of under-achievement • Conduct school and classroom observations and interviews with students, teachers, and MOE personnel concerned
Based on results found from the activities outlined above and working with curriculum and assessment personnel and teachers, develop a toolkit of school and classroom strategies/interventions for improving boys' performance at the primary school level	Organize and conduct workshops involving curriculum and assessment personnel and teachers at which major findings of the study would be presented and used to develop a toolkit.

TIMELINE

Activities	Time span											
	February				March				April			
Identification and sourcing of: (i) studies in the local, regional, and international literature on gender and education (ii) official MOE curriculum documents (iii) sample of SEA and NCSE test papers (iv) data sets of achievement test results for the 1ary and 2ary levels for the period 2003-2007 Identification of 5 schools for classroom visits and interviews												
Preparation of annotations for all relevant studies Preliminary discussion with principals of the 5 schools Preliminary cleaning and sorting of statistical data sets												
Generation of gender-based framework for analysis of documents and examination papers												
Gender-based analysis of documents and examination papers												
Compilation of list of findings and recommendations from reports												
Preparation of overview of studies highlighting model strategies												
Fieldwork: Classroom visits and interviews												
Analysis of fieldwork data												
Statistical analysis of SEA and selected CSEC results and comparison with regional and international results												
Generation of toolkit and draft report												

DELIVERABLES

1. Mid-term report: March 2nd 2009
2. Draft final report: April 6th 2009
3. Final report: April 16th 2009

Submitted February 9th 2009

Appendix B

Categories of Analysis: Language Arts Curriculum

Content Coverage		Cognitive Demand		Teaching Strategies		Classroom Resources		
Listening - Attentive		Knowledge		Teacher Read Aloud		Field Trip		Grammar
Listening - Appreciative		Comprehension		Teacher Modelling		Texts		Vocabulary
Listening - Critical		Application		Writing Activity		Audio Material		Spelling
Speaking		Analysis		Think Aloud		Manipulatives		Punctuation
Visual Literacy		Synthesis		Class Discussion		Visuals		Comprehension
Literature		Evaluation		Listening Activity		Audio Visual material		Study Skills
Reading Mechanics				Games		Resource Personnel		Creative Writing
Vocabulary				Role Play				
Reading Comprehension				Oral Activity				
Writing - Process				Cooperative Activity				
Grammar				Reading Activity				
Listening - Attentive				Drama				
Listening - Appreciative								

Categories of Analysis: Mathematics

Content Coverage		Cognitive Demand		Class		Classroom Resources		
Geometry		Knowledge		Teacher		Field Trip		Geometry
Number		Comprehension		Teacher		Texts		Number
Money		Application		Writing		Audio Material		Money
Measurement		Analysis		Think Aloud		Manipulatives		Measurement
Statistics		Synthesis		Class		Visuals		Statistics
		Evaluation		Listening		Audio Visual material		
				Games		Resource Personnel		
				Role Play				
				Oral				
				Cooperative				
				Reading				
				Drama				

Categories of Analysis: Social Studies

Content		Cognitive		Affective		Classroom Resources
Personal and		Knowledge		Receiving		Field Trip
History		Comprehension		Responding		Texts
Geography		Application		Valuing		Audio Material
Citizenship		Analysis		Organising		Manipulatives
Health		Synthesis		Internalising		Visuals
		Evaluation				Audio Visual material
						Resource Personnel

Categories of Analysis: Science

Content		Cognitive		Classroom
Living Things		Knowledge		Field Trip
Ecosystems		Comprehension		Texts
Matter and		Application		Audio Material
Structures and		Analysis		Manipulatives
Energy		Synthesis		Visuals
Earth and Space		Evaluation		Audio Visual material
				Resource Personnel