



EL CURRÍCULO A DEBATE

Teachers, curricula and standards: a Commonwealth Caribbean perspective

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Introduction

Allow me two personal comments before addressing the subject at hand. First, in my long engagement with national, regional and international education, the justification for every single major initiative has been to improve education especially for the poor and marginalized. Yet, every new major initiative begins by reciting the plight of the poor and marginalised and bemoaning the lack of progress in their status. This continuous chorus of lament about failure and lack of celebration of success caused me to reflect seriously upon whether I was a part of a highly incompetent enterprise or conversely part of a conspiracy to keep the poor and marginalized permanently in their place. However, careful analysis reveals that the tendency to minimize success and to maximize failure is in fact a distortion of reality. Moreover, this distortion hinders continuity in engaging the challenges faced by the poor and marginalised. Let me give an example of this distortion of reality from my own country.

Jamaica is one of the few countries of the world that periodically tests functional literacy of its population 15 years and older. Jamaica has conducted national functional literacy tests of a one per cent random stratified sample of its population 15 years and older in the years 1964, 1975, 1981, 1987, 1993 and 2000. The structure of data from every one of the six literacy surveys has been the same. Women are more literate than men. Urban residents are more literate than rural residents. Young people are more literate than older people. In every survey, the most literate has been the age cohort most recently out of school, that is, the 15 to 24 year age cohort. Note, however, the same age cohort that was most literate in the 1964 survey was the most illiterate in the 2000 survey. Further, the functional literacy level in each survey has increased. Yet the school system is not praised for improving literacy in the adult population over the 36-year period. Instead, contrary to the empirical evidence, there is the claim of declining literacy among young people. This is not to say that there is no room for further improvement in literacy levels in Jamaica. Rather, it is to say that if there is no appreciation of the success that schools have had in raising literacy levels in Jamaica, there will be little recognition of where schools have failed some students and therefore where new initiatives should focus.

The current tendency to disregard past successes and highlight deficits and failure has the potential to lead to constantly starting over from scratch, instead of building on what has gone before. The relevancy with respect to curricula is that over the last 20 years considerable resources have been devoted to curriculum reform and development. If in 2006 there is no critical assessment of what has been achieved, then there is the great risk of unnecessary and needless repetition of curricula reform. In circumstances of scarce human and financial resources, this cannot be justified.

Second, when I first entered teaching as a secondary school science teacher in the 1960s, it was virtually impossible to ignore or not to become involved with the development of new science curricula in the United States: BSCS in Biology; CBA and CHEMS in Chemistry, PSCS and Harvard Project Physics in Physics. So I spent a few summers in the United States taking courses to equip me to use these new science curricula. As a post-doctoral fellow, I had the great privilege of participating in some research in the United States which focused on the implementation of Harvard Project Physics in the classroom. Indeed, my first public appointment in Jamaica, at the tender age of 27, was Chairman of the National Science Curriculum Committee.

In 1970, I attended a major conference in the United States which reviewed the experience of the implementation of these new science curricula in schools after over US\$100,000,000

had been spent on this entire enterprise. The paradigm that was employed to develop these new science curricula was for Nobel Laureates in the particular science, along with eminent professors of education and psychology and master science teachers of that subject to develop the science curriculum for secondary schools. These curricula were accompanied by teachers' guides used to train teachers and student workbooks with exercises related to each topic of the specific curriculum. Two conclusions of this conference had a career long influence on my understanding of teachers and curricula. These were:

- No curriculum could be teacher proof, even if it was developed by the greatest scientists, the most eminent educators and psychologists and the best teachers.
- A syllabus in the hands of a good teacher could accomplish much more than the best curriculum in the hands of a poor teacher.

Since that conference in 1970, I have always exerted and asserted myself in efforts to produce good teachers and to leave it to colleagues to work on the matters of curricula. This is not to say that curricula are unimportant. However, it is to say that good and well trained teachers constitute a prerequisite for the successful implementation of any curriculum.

Having revealed my bias in approaching the topic of curricula and teachers, it is necessary to state my view of the elements that contribute to the development of "good and well trained" teachers.

1. Good and well trained teachers have a sound grasp of the major ideas and principles and a sound working knowledge of the content of the subjects that they teach. It is positively dangerous to be able to teach nothing beautifully.
2. Good and well trained teachers have thorough understanding of the different ways that children learn and how best to teach them, that is, of pedagogic content knowledge.
3. Good and well trained teachers are committed to the major aspirations and hopes of their societies, have an unequivocal commitment to their students and passionately inspire and motivate their students to fulfil both societal and personal ambitions.
4. The best place to learn to teach is in the classroom with support and mentoring from more experienced teachers. Good and well trained teachers continue to learn to teach through their classroom experiences.
5. Good and well trained teachers engage in career long professional development in order to respond effectively to changing demands in schools and classrooms.

Teachers, curricula and repeated cycles of educational reform

Teachers do not teach nor are curricula formulated in isolation. Further, neither teaching nor curricula are static but are constantly confronted with imperatives for change. The root of change resides in the fact that modern societies are invariably composed of numerous groups differentiated by combinations of criteria such as ethnicity, religion, ideology, geographical location, earning power, cultural practices and historical antecedents. These groups contend for power, influence, resources, status and adherence to belief systems. Over time, as these groups contend, alliances are made, unmade and re-made with different compositions, configurations, concessions and compromises as they ascend and descend in the control of and influence over state machineries, levers of the economy and canons of belief guiding behaviour. Put another way, over time the bases of societal organization are repeatedly negotiated and re-negotiated as the groups that compose them contend and compete for power, resources, status, cultural dominance and the ascendance of belief systems.

The implication for education of these repeated shifts in alliances, allegiance and ascendancy between groups is repeated cycles of reforms as the education system is required to take account of the intentions, agenda and interests of the groups in ascendancy at any particular

time. In modern democracies, these cycles of reform usually follow changes in political regimes following elections in which party manifestos advocate policy directions that will be taken if the party is elected.

The Commonwealth Caribbean has its own distinctive history with respect to the reciprocal relations between education and society. Given the colonial origins of its modern societies, Caribbean countries have all had dominant minorities that have been ethnically different from their marginal majorities. While in their colonial period, it was only the power of numbers and the threat of mass violence that rested with the marginal majorities with constitutional reform bringing into being, first adult suffrage and representative democracy and later political independence, political power has shifted to the marginal majorities. While dominant minorities still retain ascendancy with respect to resources and status, this fundamental shift in power relations between the dominant minorities and marginal majorities set off significant reforms in education throughout the region during the second half of the twentieth century. These reforms resulted in universal primary education, substantial expansion of access to secondary education and the establishment of university education within the region. The implementation of these reforms was not simply the result of constitutional and political changes but also as a result of the fact of the coincidence of social demand, political will and sustained economic growth over a thirty-year period.

What must not be missed, however, is that educational reform within the Commonwealth Caribbean in the last half of the twentieth century and first decade of the twenty-first century has not only had to take account of the internal social, political and economic imperatives of Caribbean societies but also to external impositions which have come from three main sources that can be listed briefly as follows:

- Major changes in trading relations in the world with the emergence of the European Union, the North American Free Trade Agreement, the reform of the GATT and the formation of the World Trading Organisation. While these may be placed under the popular title of globalisation in practical terms for the Caribbean, these changes translate into the removal of preferential agreements previously held with particular countries within the new trading blocs, the imposition of new terms and conditions over which the Caribbean has little control and the consequential response to develop CARICOM and the Caribbean Single Market and Economy (CSME) as a means of coping with and responding to these external realities.
- The revolution in technology as fibre optics, satellite technology, digital technology and the microchip have combined to impact virtually all areas of human endeavour and thus begin to inaugurate the information society and with it the consequential explosion in knowledge.
- Comparisons with other countries, for example, Singapore, South Korea, and Taiwan in South East Asia which at the mid-twentieth century were about on the same level of development as the Caribbean but which at the end of the twentieth century had made significantly greater progress in providing their populations with access to opportunities and higher standards of living.

Role and mission of teachers

The societal mission of schools and the essential role of teachers have remained basically the same since schooling was invented and the teaching occupation was created in the third millennium BCE. These can be summarised briefly as follows:

1. To mobilise peoples of different and diverse social backgrounds and origins to embrace common identities, develop shared visions of their destiny, hold similar values and systems of ascribing worth, develop trusting relations and build bonds of solidarity.
2. To inspire, motivate and engage the mobilised peoples to construct their future against all internal obstacles and external odds while at the same time taking full advantage of all opportunities possible in their circumstances.

3. To build community across generations of the mobilised people.

In essence, the mission and role of teachers is to nurture and foster inclusion, especially of groups that were previously excluded and marginalised; to engage society in construction of its future and to build community across generations as the means of ensuring renewal thereby sustaining society. For these reasons the mission of schooling and responsibilities of teachers do not fit neatly in the four or five year policy mandates of the contenders for political office. It is therefore not surprising that over the last 25 years teachers' organisations across the Commonwealth Caribbean have been in the forefront of seeking to dissolve the impulsive cycles of educational reforms usually associated with changes in political regimes within the solvent of the long-term generational interests of the peoples of the sub-region such that each new wave of reform builds upon previous efforts rather than to wipe the slate clean in order to start from scratch.

Role and functions of curricula

The broad role and function of curricula is to document:

- The goals and aspirations of a people in constructing their future as a distinct society or community or nation within the global community.
- The content to be learned in different areas and the ways students' intellect and imagination needs to be developed in order to construct the envisioned society and achieve the stated goals and objectives.
- The suggested methodologies, activities and technologies to be employed in enabling teachers to teach and students to learn the specified content, ways of thinking and imagining deemed critical to the future of the society or community or nation.
- The teaching and learning materials and other resources to be used in the teaching and learning processes.
- The expected outcomes in relation to the goals and aspirations.
- The means of monitoring, assessing and evaluating the expected outcomes.

The written curricula are important as the foci around which the state can be mobilised to provided the inputs needed for its successful implementation, parents are mobilised to support and present their children to schools, communities can be mobilised to provide support for the operation of schools, principals and teachers are guided with respect to the processes to be used in management and instruction and students can have clear notions of what they should learn and achieve. Essentially, the great value of curricula is that of bringing all stakeholders and actors to the same page from which they can act separately but cooperatively, within the framework of a shared consensus.

Curriculum development in basic education in the Commonwealth Caribbean

While the basic education in the Commonwealth Caribbean shares several common features with Latin America, there are a few differences that need to be noted in the discussion on curricula. While Latin America has a distinct advantage over the Commonwealth Caribbean with respect to tertiary education, the situation with primary and secondary education is the reverse. In all the countries of the Commonwealth Caribbean, more than 90% of children at the early childhood level are enrolled in pre-school. Repetition and drop-out rates are low; completion rates are high; that is, there are relatively high rates of internal efficiency. The challenges related to unsatisfactory levels of effectiveness. At the end of primary schooling, somewhere between 20 to 30 per cent of Grade six students are functionally illiterate. Achievement in Mathematics and Science is even lower. This modest level of effectiveness is amplified by the fact that 13 of the 17 countries now have universal secondary education. Putting children into secondary schools that are unable to read, write and calculate is frowned upon in most quarters of Commonwealth Caribbean societies.

The Commonwealth Caribbean has a long history of using written curricula in its school systems. All curricula for basic education in the Commonwealth Caribbean were revised in the 1980s and again in the latter part of the 1990s and beginning years of 2000. Considerable

investments have been made in curriculum development involving resources of Governments and loans from the Inter-American Development and World Banks. The primary focus of all these curricula reforms has been to improve the quality of primary and secondary education. On the whole, the countries have elegantly written pedagogically sound curricula that compare favourably with any in the rest of the world. The issue is not what exists on paper but what obtains in practice. The point would need to be made that the gap between what is written on paper and what is provided in practice is not the same in all countries. In this regard, it should be noted that the Bahamas, Barbados and the British Virgin Islands have not much to narrow the gap between the levels of provision to implement the curriculum in public and private schools.

Invariably, curriculum development and reform in the Commonwealth Caribbean has involved piloting the new curriculum in a limited number of schools. The gap between what is written on paper and what obtains in practice is seldom evident in the pilot schools. The implementation of the new curriculum is backed with appropriate training and support for the teachers in the pilot schools, the provision of materials and ample supervision from the curriculum officers of the Ministry. The gap becomes evident when the curriculum is implemented to scale across the entire school system. The gap is narrowest in those countries in which the expansion to the scale is accompanied with the same provision and support as obtained in the pilot.

Teacher education and curricula in the Commonwealth Caribbean

It is important to note that to be as a primary school teacher one has to successfully complete secondary schooling as judged by passing the requisite subjects in the sub-regional CXC examinations. Primary teacher training programmes are offered in colleges and universities and vary in different countries from two-year certificate, to three-year diploma to four-year degree programmes. In all countries of the sub-region, primary and secondary school teachers are paid the same salaries based upon their qualifications and experience.

One of the general principles followed in the Commonwealth Caribbean is that all teacher preparation programmes for the primary and secondary schools teachers in colleges and universities training teachers must include courses addressing the national curriculum in primary or secondary schools. Another general principle is that whenever there are reforms in the national curriculum at either the primary or secondary levels there must be corresponding reforms in the curricula training primary or secondary school teachers.

As in the case of curricula schools, the same obtains for colleges and universities training primary teachers. There are well written curricula for preparing primary and secondary school teachers. Further, the last cycle of reform is quite recent. The challenge is not what exists on paper but what exists in practice, that is, the resources, human and financial, to implement the curricula as written.

The problem to be addressed

It should be clear from the foregoing that in addressing the issue of teachers and teacher education and curricula in the Commonwealth Caribbean, the problem to be addressed is not a new round of curriculum development and reform. The problem to be addressed is implementing the curriculum as written for schools and the curriculum for training teachers as written for colleges and universities. This problem has to be addressed within the framework of scarce resources that are fiercely competed for. A critical factor to take into consideration is that while the curricula are national and common to all schools and teachers, gap in implementation between paper and practice is not as widespread. Almost any objective measure that is applied will show that some schools and teachers are making good progress with the implementation of the curricula on paper as evidenced not only by their practice but by the performance of their students. Prudence would therefore counsel focus on those schools, teachers and students where there is empirical evidence of challenge in the implementation and success in achieving the desired goals.

The Caribbean Centre of Excellence for Teacher Training

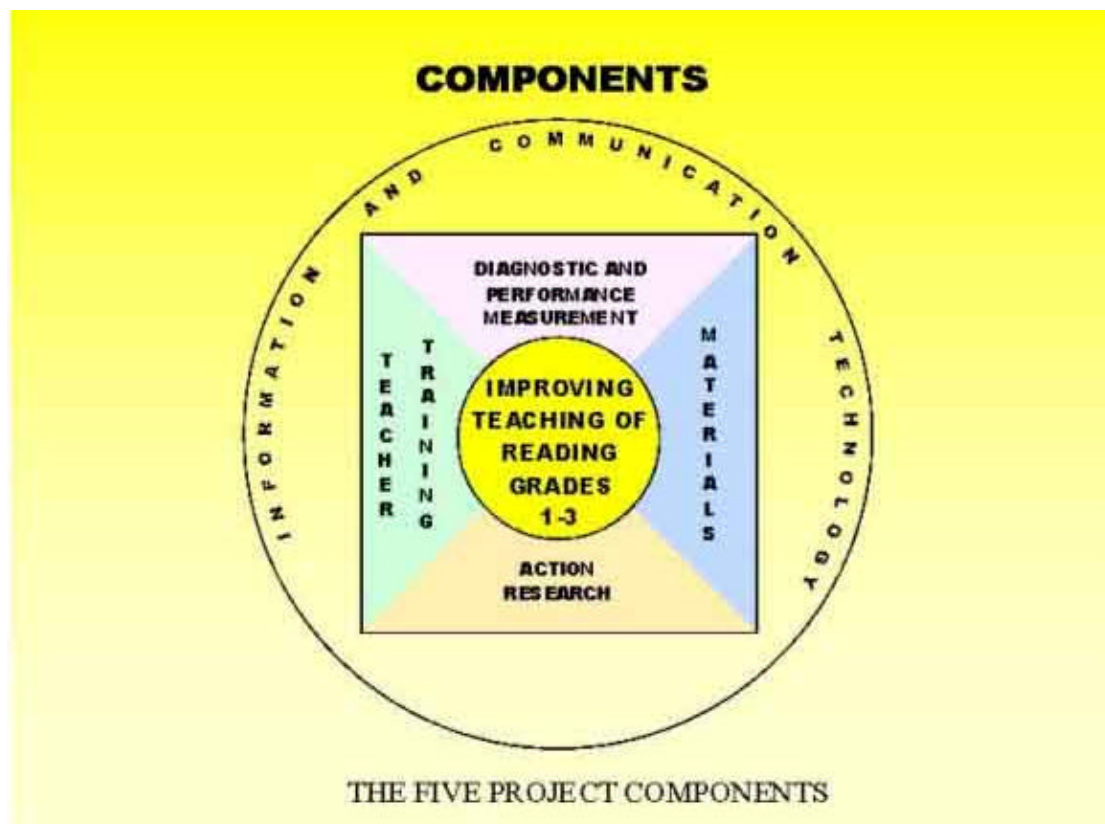
Permit me to outline an initiative, the Caribbean Centre of Excellence for Teacher Training (CETT) which seeks to address in a dynamic and coherent manner the issues of closing the gap between the written curriculum and instruction delivered in the classroom. As you may be aware, the Caribbean CETT is one of three Centres of Excellence in Teacher Training (CETT) sponsored by President George W. Bush and funded by USAID as part of the Summit of the Americas Initiative agreed in Montreal, Canada in April 2001. The other two CETT Centres are headquartered in Peru for the Andean countries of South America and in Honduras for Central America.

The strategic objective of the CETT initiative is to improve the teaching of reading in the first three grades of primary school as the critical means of teaching all children to read by the end of Grade 3. The assumption is that given the pervasive effect of reading on all subjects of the primary curriculum, teaching students to read in the early grade will have a substantial and general effect in improving the overall quality of primary education. The CETT initiative across the three Centres is expected to train 15,000 teachers and impact 1,000,000 students over a five-year period.

CETT Centres are expected to target schools serving disadvantaged populations that are performing below average on tests administered by the Ministry of Education in the respective countries.

The CETT initiative seeks to accomplish its goal by the use of five components:

1. Diagnostic and Performance Measurement
2. Teacher Training
3. Material Provision Through Procurement and Production
4. Action Research
5. Information and Communication Technologies



While the Caribbean CETT is one of three Centres, each Centre has been allowed to structure and fashion its operation in a manner that is consistent with the imperatives of its sub-region.

Accordingly, the Caribbean CETT is not conceived as a physical place but a virtual and distributed Centre as shown in the diagram below. Originally, the Centre was conceived to involve all twelve independent countries of the Caribbean. However, USAID funding has been restricted to five countries: Belize, Guyana, Jamaica, St. Lucia and St. Vincent and the Grenadines. However, Grenada and Trinidad and Tobago have joined the Caribbean CETT through their own financing. In addition, the Caribbean CETT has received expressions of interest to join from Barbados, Dominica and St. Kitts and Nevis.

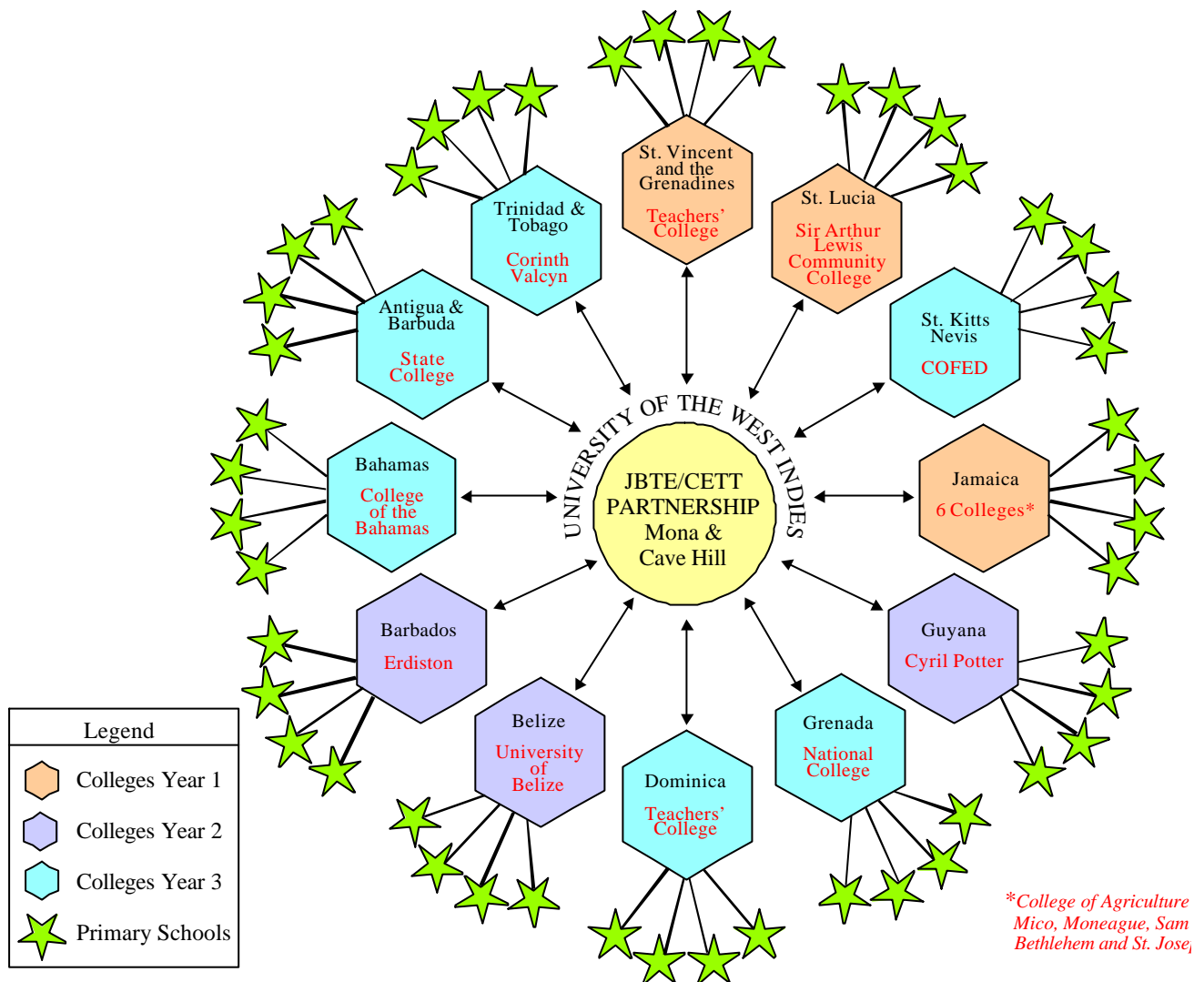
Structurally, the Caribbean CETT is composed of a Project Implementation Unit in the Joint Boards of Teacher Education on the Mona and Cave Hill campuses of the University of the West Indies and 14 college implementation units located in colleges training primary teachers in the seven countries. Currently, the Project is being implemented in 147 primary schools.

The Caribbean CETT commenced its work by commissioning five state-of-the-art reviews on research done on different aspects of the teaching of literacy in the English Language. These included:

- Learning to read and write English
- Learning to read and write English in the Commonwealth Caribbean
- Teaching teachers to teach literacy
- Teaching literacy in multi-lingual contexts
- Assessment and evaluation of reading achievement

The CETT initiative directly targeted schools serving disadvantaged populations as the most effective means of addressing the issue of equity with respect to high education outcomes of schooling. The Caribbean CETT took account of the review of this approach by (Wolff, Shiefelbein et al 2002) and their conclusion which could be summarized briefly as follows:

1. The combinations of 'best practices of effective schools' that constitute the content of these initiatives do not work for all schools serving disadvantaged populations.
2. There appears to be an upper limit of the improved student performance, which at best does not exceed the level of performance of effective schools.
3. Once this upper limit is achieved, student performance then plateaus where the initiatives are maintained.



Caribbean CETT and the pre-service training of teachers

Bearing in mind that the key strategy of the CETT is to promote excellence in the teaching of reading among primary school teachers and taking into consideration that the core mission of the Joint Boards is to ensure quality in teacher preparation, the Joint Boards have integrated the Caribbean CETT into the preparation of primary school teachers in the colleges of participating countries. This integration is crucial in that it seeks to guarantee that all new teachers prepared by the colleges for primary education are competent to teach reading and writing. This is also critical to the long-term goals and sustainability of the CETT goals.

Accordingly, the Caribbean CETT has taken steps to ensure excellence in the preparation of primary teachers in pre-service programmes in colleges and universities. The first step was to ensure that the curricula for the training of primary school teachers made adequate provision for preparing primary teacher trainees to teach reading. Having assured itself of this provision, the Caribbean CETT also did the following:

- Established common Caribbean graduation standards for the preparation of primary school teachers in the teaching of reading so that all graduates of pre-service preparation programmes in the region are competent to teach reading at the primary level.
- Provided in-service training and staff development support for college and university lecturers in the teaching of reading in perceived areas of weakness in the teacher preparation programmes. The training for these teacher educators in the teaching of reading has included summer courses in phonological awareness,

assessment of reading achievement, the use of classroom libraries in reading instruction, and brain research and cognitive science applied to the teacher training.

- Promoted, supported and equipped a Literacy Resource Centre at each college so that pre-service teacher trainees can be instructed in the best facilities with respect to the teaching of reading and writing as well as to provide similar facilities for the in-service training of teachers in the project schools. The Literacy Resource Centres at each college are provided with production capabilities and received all items of material and equipment supplied to schools for the teaching of reading.
- Strengthened college libraries with respect to reference books and on-line resources needed by staff and students engaged in courses in the teaching of reading.
- Provided colleges and universities with a classroom observation instrument by which to assess teaching behaviour in the teaching of reading.

By strengthening the staff of the colleges and universities training primary teachers, improving their library holdings including access to on-line resources, improving their facilities to teach reading and setting graduation standards and providing an instrument to assess desired teaching behaviour in the teaching of reading, the Caribbean CETT expects that colleges will be better able to implement and execute the written curriculum in the teaching of reading to teacher trainees.

The work with project schools

The Caribbean CETT has understood and interpreted its work with poor performing schools serving socially disadvantaged urban and rural community schools as the deconstruction of cultures of failure where teachers, parents and even students have become comfortable with non-performance and the construction of cultures of success where teachers and parents are committed to the success of every child. In this regard, the scope of the tasks involved includes:

- Getting teachers and parents to believe in the potentials and prospects of students and students to believe in themselves.
- Getting teachers, parents and students to commit to the effort and energy that need to be expended to achieve the expected goals.
- Re-organizing the use of time in schools and in classes so that sufficient time is devoted to the tasks related to success.
- Transforming classrooms so that they are "print rich", exciting places that encourage students to learn.
- Building positive school and classroom climates where there is respect to each other, clear rules and guidelines governing relationships and behaviour and where students and teachers feel safe.
- Seeking to ensure that principals and teachers own the strategies by which they achieve success.

With these understandings, the Caribbean CETT attempted to create a framework for success for teachers and students through the following:

- Seeks to obtain the opinions and views of principals and teachers in each project school on what needed to be done to improve the teaching of reading and student achievement in literacy at their school. Working with the views and opinions expressed, assist the principals and teachers to develop appropriate action research interventions for the different classes at their schools.
- Simultaneously in dialoguing with the principals and teachers in schools, the Caribbean CETT collected the Language Arts curricula of all the countries of the Commonwealth Caribbean and working with representatives of Ministries of Education, experts from the University and eminent specialists in literacy education within the Caribbean, developed Common Caribbean Standards for reading and writing achievement in order to provide a regional framework in

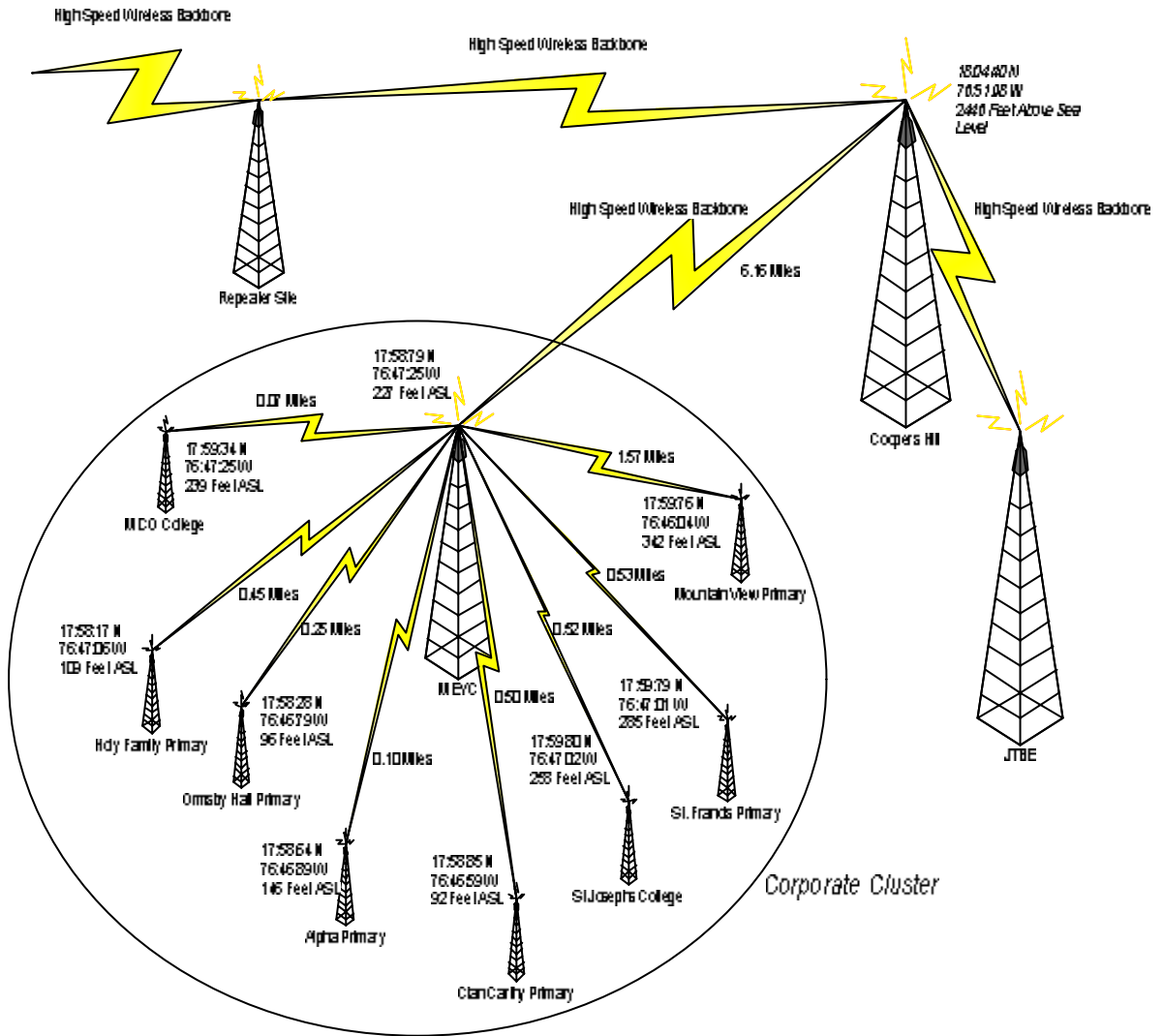
which to specify the expected outcomes of primary education with respect to literacy.

- These Common Caribbean Standards for Literacy for Kindergarten through Grade 3 were subsequently circulated to all principals and teachers in the project schools to be used as guides for instructions in the implementation of the Language Arts curriculum in their country.
- Based on the Common Caribbean Standards for Literacy, developed criterion reference performance tests for Grades 1 to 3 that is administered to students of all schools entering the Project in order to establish base-line data and then administered subsequently annually at the end of each school year to measure accomplishment toward project goals.
- The results of the initial testing of the students on the Tests of Standards are compared with the action research interventions developed on the basis of the opinions and impressions of the principal and teachers in each school. If there are substantial disparities between the views of the teachers and the empirical data, the dialogue is re-opened to address the disparities.
- Based on the action research interventions agreed, the principals and teachers are invited to identify the materials that will be needed to implement these interventions in their classes. Based on their requests, high quality teaching and learning materials are procured and supplied to the schools having been vetted to ensure congruence.
- Teachers are requested to do a self-assessment of the training they need in order to implement the action research interventions within the context of the national Language Arts curriculum that they are required to teach. These self-assessments of training needs are compared with the classroom observations of Reading Specialist, in the particular cluster of project schools, along with the training required to use the teaching and learning materials supplied.
- The Reading Specialist then designs cluster and school based in-service training taking account of the latest and the best evidence-based strategies of teaching reading and in the best practices with respect to promoting the continuing professional development of teachers in the teaching of reading and in the appropriate use of the equipment and materials provided.
- Through regular and systematic school visits at least every two weeks, the Reading Specialist in each cluster of the project schools have supported teachers with the implementation in their classes of the teaching strategies taught in the cluster and school-based workshops.
- Regular regional workshops are held for the training of Reading Specialists in the most up-to-date teacher training strategies as well as matters related to testing and technology. In these workshops, Reading Specialists are given the opportunity to share best practices and experiences and to collaborate across clusters.
- Teachers in each school are provided with diagnostic tools and kits to be used to assess the reading difficulties of students who in the opinion of the teacher are lagging behind their peers or who the teacher believes may be encountering some difficulties.
- Each school is provided with a school site version of a web-based education management information system, Primary School Manager, that principals and teachers can use to manage their classes and schools and which the project can use to track and monitor the progress of each student, each class and each grade of every school.
- A Central version of Primary School Manager is installed at the Joint Board, Mona that members of the PIU can use to monitor student performance of all schools in the project and Reading Specialists can use to perform the same function with respect to the schools in their cluster.
- An ICT technician is employed in each cluster to support the principals and teachers in each school in operating Primary School Manager and in ensuring that

data are transferred regularly from the school sites to Central Primary School Manager at the Joint Board, Mona.

- At the end of each school year, each student in each grade in each school is assessed by performance on the Caribbean Test of Standards for the particular grade.
- The tests are marked and analysed and the results fed back in analytical form to principals and teachers in time for the beginning of the new school year so that the results of the tests can be used to guide the instruction of the students in the ensuing school year.
- The test results are analysed not only with respect to mean, median and standard deviation but more importantly with respect to mastery levels with respect to the criterion for each grade, quintile, and performance on the sub-tests including initial sounds, vowel sounds, final sounds, picture word recognition, listening comprehension, reading comprehension and structure of language and grammar.
- Results are produced for each student, class and grade in each school and for each cluster, country and the sub-region.
- Workshops are held separately with principals and teachers at which the results of the annual performance tests are discussed with the principals with respect to the management of schools and instructional leadership and with teachers with respect to the effectiveness of action research interventions and appropriate actions taken if adjustments are necessary.
- Where weaknesses are identified by the performance tests, plans are made for the procurement or production of appropriate teaching and learning materials that would assist teachers with instruction in these areas. In addition, the teacher training programme is adjusted to incorporate teaching strategies that are appropriate for instruction in these areas.
- The results of the performance tests are also fed back to Ministries of Education with respect to the progress being made towards achieving the goals of the project as well as the implications for curriculum and other areas that can be addressed by policies.
- The cycle of instruction, cluster and school-based training, literacy faculties, school visits to support instruction, diagnostic testing, etc. are then repeated.
- A Wireless Wide Area Network (WWAN) has been established which links five of the six colleges training primary teachers in Jamaica with the University of the West Indies by broad band. Each college has at least a 10 megabit per second, dual, connection with the backbone which is 45 megabit per second dual.
- In four of the fourteen clusters, project schools are linked by broad band connection to the colleges serving them. These are the St. Joseph's and Mico clusters in Jamaica and the University of Belize and T. A. Marryshow Community College in Belize and Grenada respectively. In the St. Joseph's, Mico and T.A. Marryshow clusters, each teacher in Grades 1 to 3 in each project school has been provided with a computer that is connected to a LAN that is connected to the WWAN in Jamaica and Grenada respectively.
- A multimedia hub capable of providing video-conferencing, voice over IP, IP TV, video capturing from remote sites, archiving of materials and broadcast of live events over the Internet or Wireless WAN, has been established at the Joint Board, Mona.
- The Joint Board is in the process of establishing a Portal through which all the ICT services can be accessed and managed.

Proposed Layout of the Corporate Cluster



4. Developing on-line rating scales, a la e-bay, whereby primary teacher trainees can rate the easy or difficulty they experience in learning the topics in their courses in the teaching of reading, the text and reference books specified for the courses, the teaching and learning materials used in the courses, the facilities used to teach reading in the colleges and the experiences in the teaching of reading during teaching practice.
5. By linking these rating of the teacher trainees with the item analyses of tests evaluating their courses, the rating on the classroom observation instrument and the grades on teaching practice, it should be possible to obtain a better understanding of the effectiveness of the teacher preparation curriculum received by the teacher trainees. Such understanding could be useful in improving the preparation of teachers in pre-service programmes with respect to the teaching of reading.

Some Results after Two Years of the Implementation of the Caribbean CETT in Schools

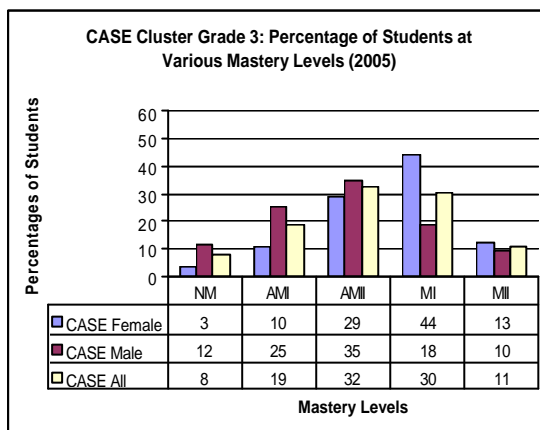
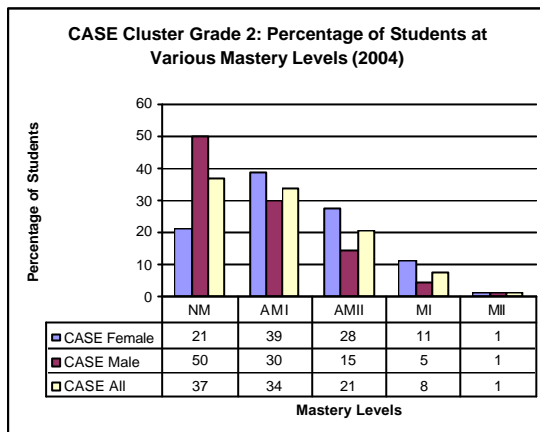
The Caribbean CETT is now in its third year of implementation in schools. After two years of implementation in schools, an impact study was done to determine the effectiveness of the project is seeking to enable students to learn to read by the end of Grade 3. The results of the study showed that students' literacy levels increased significantly with years of exposure to CETT. While the improvement after one year of exposure was modest compared to the based line, the improvement over two years of exposure was marked. See Figure 1 below.

Percent of Students at Each Mastery Level
by Years of Exposure to CETT



It is particularly instructive to mention the instance of the schools in a very rural Cluster in Jamaica. In the pre-test analysis, schools in this cluster performed at a disturbingly low level. While there was some evidence of improvement after one year of expose to the Caribbean CETT programme, the progress was marked after two years of exposure as shown in Figure 3.

Figure 3: Graphs Showing the Movement of Students across Mastery Levels in a Rural Cluster Jamaica



In Year 1, 71% of the Grade 2 students in this cluster were at unacceptable mastery levels on the continuum. However, by the end of Year 2, on completion of Grade 3, there was a major shift in that only 27% of the same students remained at unacceptable levels. In fact, in Year 1 only one percent (1%) of the students were reading at the MII level (above grade level), but by the end of Year 2, the number had increased substantially to 11 percent. While there remains great room for continued improvement, a start has been made to improve reading achievement among these students.

The Caribbean CETT as a model

The Caribbean CETT represents a model by which the curriculum, as written on paper, can be transformed into instruction delivered in practice. It represents a dynamic and coherently organised way of linking teachers, curriculum, standards, instruction, diagnostic and performance measurement, the provision of materials and the application of information and communication technology. While the Caribbean CETT application has been with respect to literacy in the early grades of primary school, it can be applied to all grades and any subject.