



Characteristics of curriculum and curriculum management: a study

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Characteristics of curriculum and curriculum management: a study

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This study commissioned by OREALC/UNESCO sought to explore the structure and management of the curricula of The Bahamas, Barbados, Jamaica, St. Lucia and Trinidad and Tobago, five [5] English speaking Caribbean territories.

Some definitions

For the purpose of this study the following definitions apply.

Curriculum management is the design, development, scope, alignment and evaluation of the written, taught and tested curriculum in all subjects. This involves the planning, implementing, and monitoring of a curriculum.

In the context of this study, a **curriculum** is defined as *an interrelated set of courses which guide the implementation of the teaching-learning activities in a planned and effective manner*. Included in each course should be the major elements of content, stated goals, intended outcomes, suggested teaching/learning strategies/activities, assessment/evaluation and resources.

It is important at this juncture to distinguish between the (i) intended (ii) written (iii) taught and (iv) learned curriculum. The **intended curriculum** is the formal approved guidelines which are remodeled to a **written curriculum** that includes all that is necessary for implementation by teachers. The written curriculum is then converted to a **taught curriculum** by the impact of the learning outcomes, the application of effective pedagogical methods, and the monitoring of its effectiveness in the classroom. **A learned curriculum** is one where the students demonstrate that they have learned the content, skills, attitudes and values as a result of effective implementation of the taught and written curricula.

Guide Questions

The guide questions of this study are

1. What are the characteristics of the countries' current curricula?
 - a) How are the curricula structured/organized?
 - b) What conceptions of learning are applied?
 - c) What curriculum model[s] is/are adopted?
 - d) What is the level of flexibility?
2. How are the curricula implemented?
 - a) How are the curricula managed in schools?
 - b) What is the relationship between curriculum management and teacher education?
 - c) What are the main strengths and challenges in the development of the curricula?
 - d) What relationship exists between the curricula and quality assessment systems?
3. What conclusions, perspectives and recommendations arise from the above?

Limitations of the study

1. All of the territories identified in this study are embarked on Basic Education reform. As such some curricula documents are written as proposals or intentions. Therefore, an analysis of this study is confined by these written curricula of intentions.
2. As a consequence, aspects of curriculum management, the effectiveness of the written or intended curricula, namely the taught curricula, the appropriate spread of subjects and time

allocation to each subject, could not be assessed. The absence of some possible evidence gives a limited indication of the degree to which all the curricula possess the characteristics and principles of effective curriculum management.

3. Moreover, effective assessment of curriculum management requires data by direct observation, examination of relevant documents such as time tables etc and interviews of stakeholders. Since these were not commissioned, their absence from the research may affect the results of curriculum management.
4. In addition, there were impediments in accessing documents from some of the territories named in the study. Some of the data were accessed from websites of the relevant Ministries of Education. As such it was sometimes difficult to decide on the currency of this data.

The discussion which follows provides a summary of the responses to the guide questions outlined above. It is important to emphasize that in seeking to answer the questions; there will be extensive quotes from curriculum documents since this study viewed each of the selected English-speaking territories as case studies and as such the quotations serve as evidence of assertions made. Because of the broad scope of this study and the number of territories, evidence of all territories could not be quoted. The absence of quotes from some territories should not lead to the inference that the related curriculum element or principle was not addressed by the territory. Thus in reading the results of this study one must be careful when interpreting and drawing conclusions based on these omissions.

1. Characteristics of Current Curricula

a) Structure of the Curriculum

Educational reform and development in all the territories have as their broad general aim the development of a Caribbean citizen of the 21st Century. At the 1997 CARICOM Heads of Summit in Montego Bay, Jamaica, it was accepted that "education is the major mechanism to bring about the necessary transformation in Caribbean Society" and therefore it must have as its ultimate goal the creation of a type of society that allows for the "evolution of a new Caribbean person."

A review of the restructured curricula of the territories in this study shows that the curricula were based on and strongly supported by the application of relevant research on children, their development and their methods of learning.

In reviewing the structure of a curriculum one must consider the principles of **breadth, coherence, continuity** and **balance**.

What emerges most clearly from an examination of all the reformed Basic education curricula of the Bahamas, Barbados, Jamaica, St. Lucia and Trinidad and Tobago is a sufficiently comprehensive breadth of experience for every pupil. **Breadth** is a requirement that provides students with a combination of different types of subjects, enrichment of other activities and by extension a variety of learning and teaching experiences. The principle of breadth suggests that students should experience coverage of a reasonable range of areas. A statement quoted from the Bahamas Ministry of Education summarizes their view of the breadth of their curriculum.

Bahamas

As we in the Department seek to make school learning more productive and meaningful and as we seek to help students acquire the competence to be active, valued members of their communities, we have developed through community support, quality curricula which reflect a deep understanding of students' needs and abilities. [The Commonwealth of the Bahamas Ministry of Education - The Curriculum

..., there are thirty-three [33] subjects being offered in the schools under three [3] major Sections (i) Technical and Vocational made up of sixteen [16] related subjects (ii) Humanities, thirteen [13] subjects and (iii) Science and Technology eight [8] subjects

In Barbados, the primary curriculum is organized around the acquisition of basic skills but demonstrates a sufficiently comprehensive range of areas of learning.

It is the responsibility of the school to develop a child who is able to (i) communicate competently in Standard English – speaking, listening, reading, writing; (ii) be numerate, reason and solve problems; (iii) demonstrate fine and gross motor development; (iv) develop problem-solving and critical thinking skills; (v) possess basic information and communications technology skills; (vi) demonstrate effective work study skills; (vii) demonstrate observation skills, and (viii) exhibit skills of personal and group relationships.

through the following subjects

Language Arts, Mathematics, Science, Social Studies, Visual Arts, Music, Physical Education, Health and Family Life Education, Religious and Moral Education, Conversational Spanish

[Curriculum 2000: Rationale and Guidelines for Curriculum Reform p. 24 & 25]

In the secondary sector, in *Jamaica*, the new curriculum also attempts to provide students with a broad programme of learning.

...opportunities to experience a broad programme as a foundation for life, for further education and for employment.

...The new curriculum is designed to be **broad and balanced**; centred around five core subjects [Language Arts; Mathematics; Resource and Technology; Science; Social Studies] plus Career Education

<http://www.moec.gov.jm/divisions/ed/core/curricula.htm>

St. Lucia's Structure of the Curriculum is not different in its attempt to do likewise.

... the curriculum is organized under three strands: viz. Life Science, Physical Science and Earth and Space. In each strand, there are three areas of achievement: (i) Understanding Basic Concepts (ii) The Nature of Science and (iii) Science, Technology and Society Under each strand is a list of Broad Objectives which states, in general terms, the knowledge and skills the students are expected to achieve by the end of each grade level. Specific Learner Outcomes for each of the areas of achievement describe the expected knowledge and skills in greater detail.

Trinidad and Tobago also attempt at a broad coverage both at the primary and secondary [SEMP] levels.

The structure of the revised Primary Education curricula consists of six [6] strands: In the Science curricula the Strands are (1) Living things (2) Ecosystems (3) Matter and Materials (4) Structures and Mechanisms (5) Energy (6) Earth and Space.

In an attempt to ensure there is a reasonable breadth in the reformed secondary sector in Trinidad and Tobago, the Secondary Education Modernization Programme [SEMP] consists of eight subject areas as a common core in the lower levels and expands its offerings in the higher levels.

The structure of a curriculum must demonstrate **Coherence** by constructing links across the curriculum so that students can make connections between one area of knowledge and skills with other areas and the world of work. The Jamaica primary curriculum has this as one of its principles.

The revised curriculum is designed to be delivered in such a way that children will be able to make connections between what they learn in all subjects, and between school and the world outside

For grades 4-6, the conventional discrete subject organization approach is retained, but here there is a greater emphasis on the linking of content within and between topics to ensure **coherence**.

Learning must build on students' previous experiences and attainment and prepare them for further learning. This is the essence of **continuity** in a curriculum. The results of this 'comparative' curriculum study reveal that all the curricula examined demonstrate different levels of **continuity**, a progressive vertical movement of the content and skills from one level to another. Students are provided with a series of clearly outlined outcomes which provide linkages from early childhood through primary, secondary and post secondary. Also, the skills and content are built up incrementally.

Barbados curricula documents demonstrate this progressive movement most clearly. For every skill identified, the curricula documents indicate where the concept/skill/fact should begin and at what level the concept/skill/fact is to be developed and maintained.

An example of this is outlined below.

Topic		Levels				
		1	2	3	4	5
2.0	SAFETY IN THE LAB					
2.0.1	Safety rules	•	•			
2.0.2	Safety symbols					
2.0.3	Harzardous situations	•	•			
2.0.4	Accident prevention in the home, garden and lab	•	•			
2.0.5	Following instructions	•	•			
2.0.6	Proper use of burners and cookers	•	•	ö	ö	ö
2.0.7	Extinguishing a small fire	•	•			
2.0.8	First aid procedures	•	•			
2.1	IMPORTANCE OF SCIENCE					
2.1.1	Contribution of science to our society	•	•			
2.1.2	Work of a regional scientist					
2.1.3	Skills of a scientist	•	•			
2.1.4	Components of a practical activity					
2.1.5	Execution of practical activities	•	•	ö	ö	ö
2.1.6	Reporting of practical activities	•	•	ö	ö	ö
2.2	EQUIPMENT					
2.2.1	Identification of equipment	•	•	ö	ö	ö
2.2.2	Uses of this equipment	•	•	ö	ö	ö
2.2.3	Use of equipment	•		ö	ö	ö
2.2.4	Care of this equipment	•	•	ö	ö	ö

Key

• Indicates where the concept/skill/fact is begun

ö means to maintain and develop the concept/skill/fact

[Integrated Science Syllabus for Level Two Secondary School 2001 MOE Barbados p.2 & 3]

Another example of this is the progressive depth and rigour of the technological skills and competencies taught in primary schools and which are to be continued for the first three years of secondary school.

The Barbados, Ministry of Education Youth Affairs and Culture, in their Curriculum 2000 Rationale and Guidelines for Curriculum Reform document states its intention to be that "there will be clear articulation between the upper levels of the National Diploma of Secondary Education and the CXC syllabuses." In addition, the curriculum will be so articulated that students will begin to acquire the prerequisite knowledge and skills for CXC examinations as soon as they enter secondary school [p. 36].

The Language Arts syllabus outline of Trinidad and Tobago articulates a similar pattern.

The syllabus in language arts contains elements in increasing levels of complexity with the spiral of English Language Arts curriculum. The elements are Listening, Speaking, Visual Literacy, Literature, Reading-Mechanics, Vocabulary, Reading – Comprehension, Study Skills, Writing –process, mechanics, Grammar.

Jamaica's new secondary curriculum is designed to build on the knowledge, skills, attitudes and understanding acquired in primary school and are sequenced so that there is progression from one level to another.

Articulated: building on the primary school curriculum for Grades 1-6; preparing students for work for CXC and other examination courses in Grades 10-11

<http://www.moec.gov.jm/divisions/ed/core/curricula.htm>

Additionally, a noticeable consistency is that the structure of the detailed curricula is the representation of all major elements of (i) Topic/Main ideas/Concept insight/Modules, (ii) Skills, (iii) Attitudes, (iv) Suggested teaching/learning activities/strategies, (v) Areas of integration / interrelated / integrated activities, (vi) Expected outcomes/specific/learning (vii) Assessment/Evaluation (viii) Resources. There may be variations in the names but the elements are consistently present.

Balance in a curriculum ensures that the time for each area of the curriculum is appropriately allocated. Without site visits to schools it was not possible to ascertain this aspect of balance in the curriculum. The only hint of a balance is a skewed allotment of time disclosed in the responses of interviews with thirty four [34] primary school teachers in Jamaica. The results revealed that an obstacle to the teachers' use of innovative practices was "insufficient time allotted to subject areas." [Analysis of teacher interview MOEYC report 2004-07-17 p. 4]

b) Conception of Learning

How learning takes place impacts on all other elements in a curriculum. Therefore it is necessary to determine what conception of learning the framers of the curricula had in mind when planning the curricula. '**Conception of learning**' suggests a fundamental way a person perceives and understands phenomena in the world. The common conception of learning found in all the curricula documents is that students learn best by 'constructing' knowledge. The significant point is that learners 'construct' knowledge based on prior knowledge, experiences and interests within a social context. The significant characteristics are (i) an emphasis on learners' active role in the 'construction' of knowledge (ii) learners' active involvement in their work (iii) emphasis on learner generated solutions through problem solving rather than memorization of information or procedures (iv) the application of authentic experiences which build on the learner's past experiences (v) pedagogy that includes helping students to take responsibility for their own learning. Constructivism is clearly linked to student-centred learning. Student-centred learning requires a reconceptualization of teaching and learning. It requires a change from students being viewed as passive recipients of information to being participants in their own learning. It requires teachers to focus on helping students to

'construct' understanding of concepts by themselves. Therefore, in the classroom, students primarily work in groups. Teachers facilitate the groups' learning, rather than the 'traditional' dominance of a one-way transmission of knowledge. The following reinforce the above.

Bahamas

Diversity in the ways children learn best. It is imperative therefore that there are opportunities provided for students to learn in a variety of ways – **individually, co-operatively, independently, with teacher direction, through hands on experiences, through examples followed by practice.**

Teaching should be student-centred and should establish flexible learning communities where students' strengths are built upon and their weaknesses addressed. There should be interesting simulated and real life experiences.

...promotes the activity-oriented inquiry-based approach... develop Process Skills and involves students in all aspects of the process of scientific investigation using the Scientific Method...

The Primary Science Curriculum Guidelines, used in collaboration with resource materials and recommended teaching strategies, cater to the variant and individual needs of students.

Bahamas - High school science

...basic concepts and attitudes of Science which explain the natural phenomena of this planet and the interrelationships of its organisms. Thinking and understanding Science are shared teacher and student processes and are addressed within the curriculum through a balanced interaction of "hands-on" activities, content and value-driven exercises

Barbados

The process has been led by the Ministry of Education and the Curriculum Development Council, and is based on **constructivism** and the **child-centred** approach. As a result, the focus is the student's interaction with the curriculum rather than the curriculum dictating the pace of learning. In addition, the revised curriculum promotes the utilisation of indigenous content and materials, as well as authentic, relevant experiences.

General principle undergirding the reform initiative is that the **student should be placed at the centre** of the teaching-learning process. The teacher is a facilitator of students who are active participants in their own learning. Classroom delivery should therefore reflect student-centred, **constructivist** teaching/learning strategies.

Teaching strategies emphasise hands-on collaborative learning activities.

...To construct their own learning, students need to have the capacity to refer to past experiences, analyse new information and then

internalize knowledge after active consideration and **collaboration** with peers

Jamaica

The revised curriculum is designed to be delivered in such a way that children will be able to **make connections** between what they learn in all subjects, and between school and the world outside.

Education at this level should be a process through which children **construct meaning** for themselves, begin to understand the world, and to make wise choices.

The integrated curriculum is therefore designed to facilitate a more **child-centred approach** to teaching and learning in an effort to empower the child to face the challenges of the new millennium.

Lessons will be student-centred and performance/competency based, and will support the student in acquiring, developing and applying skills in real-world contexts.

Socially responsible: students will work in collaboration with others and take responsibility for their own learning.

Infusion: Here, students and teachers seek to interact **constructively** with instructional material and equipment. A culture of cooperative learning and excellence in achievement is defined and developed.

Child centred, less teacher-dominated approach.

St. Lucia

The student must be actively engaged in **constructing meaning**, using existing ideas in trying to interpret new situations. Students must be provided with opportunities to discuss their ideas and experiences with others. In the process, their ideas are modified, extended or changed, which is really what learning is all about. The frameworks and strategies employed for developing scientific and technological skills and deepening the understanding of scientific and technological concepts must really engage the mind and stimulate the imagination of students. Therefore, the curriculum must be seen as the set of learning experiences that enable this to happen.

The contexts used must be relevant to pupils' interests and concerns. To ensure that the science and technology activities are relevant and interesting, scientific and technological knowledge and skills must emphasize application to issues, concerns and problems of the students' world - the experiences and interests of the students.

Trinidad & Tobago

Constructivist approaches in Science and a holistic and **integrated** approach to language and the teaching of language. It suggests that the teacher should provide the child at the primary level with multiple opportunities for achieving his/her fullest potential

for language acquisition and self-development through language on both an individual and **co-operative** basis.

Among the suggested techniques/strategies recommended are **authentic, varied** oral and literacy tasks.

The principles which govern the techniques and strategies are **meaningful experience based** contexts to promote language competence. A **socially interactive classroom climate** that encourages risk-taking. The view of language as an **integrated holistic collaborative activity**.

Like the above, the new Draft Primary School Mathematics Syllabus acknowledges the application of constructivism for learning and teaching

...adopts a **constructivist** orientation. The aim is to make the learning of Mathematics meaningful and relevant for the pupil. In developing thinking/problem-solving skills and reasoning ability in their pupils, from a constructive perspective, it is critical that teachers model appropriate behaviour, guide student activities, and provide various forms of examples rather than use those commonly employed instructional practices that emphasize telling and directing. In other words: **"They must provide a learning environment where students search for [create] meaning, appreciate uncertainty and inquire responsibly."** [*Primary School Syllabus, Mathematics, Republic of Trinidad and Tobago, Ministry of Education, Sept 1999*]

c) Curriculum Models

The provision of a clear set of outcomes in a curriculum, serves as a guide for the alignment of teaching activities and assessment and evaluation. Outcomes, therefore, act as targets for monitoring the taught curriculum, student performance and for formulating interventions thereby assuring accountability and quality. In the Bahamas, Barbados, Jamaica and Trinidad and Tobago, evidence suggests that the curriculum model is an **Outcome-Based** one for Basic education curricula from primary to secondary. An Outcome-Based model is characterized by stated observable, measurable outcomes and the implicit belief that all students can succeed. It is characterized by clarity of focus, expanded opportunities for success, flexible time and teaching methods. Gwennis Mc Neir reinforces the view that Outcome-Based models offer a balance between school autonomy and accountability [ERIC Digest No. 85]

Barbados

The revised curriculum focuses on Outcome-Based Education (OBE). This approach involves the development of attainment targets that outline specific student outcomes for each grade level in the various subject disciplines. The attainment targets facilitate the development of national standards, as well as greater participation of parents in the education of their children.

[Programme Co-ordinating Unit – MOE- Barbados]

In conjunction with the Outcome-Based model, another model explored is an **integrated approach** for selected subjects and/or topics. Curricular **integration** or **infusion** is an approach to curricular organization in which the separating subject matter areas are partially removed and become blurred. It is a seamless combination of subject areas. The resulting pattern overlaps in topics and concepts. Indications of this approach in the curricula are stated out below.

Bahamas

At every level, Language Arts should be taught in an **integrated** manner and reinforced in content area subjects. This integration should be encouraged through the block scheduling of strands. Ideally, these blocks should be scheduled during the first periods of the day.

Teachers should aim to integrate Literature in the development of other Language Arts skills...among other things, develop critical thinking skills

Barbados

The PEACE programme is a more **integrated approach** to learning. The programme utilizes the Performing Arts to empower students through creative education. The PEACE programme focuses on values which are taught while imparting knowledge.

Social and Emotional Learning skills such as self-management, problem solving, decision-making and conflict resolution are integrated across the curriculum

Jamaica

The adoption of an integrated approach to the curriculum enables students to see 'wholeness' about their learning in the classroom. A variety of strategies should be used to provide self-directed, integrated learning experiences. [MOEYS, *Secondary Social Studies September 2005*].

JAASP – Jamaica All-Age Schools Project – Began in 2000 for 48 all-age schools, using the Revised Primary Curriculum (RPC) & National secondary grades 7 – 9 (ROSE) curriculum.

Curricular model – Integrative-discrete model of content organization. The curricula for grades 1 to 3 exemplify the integration of content around major themes adding greater meaning to learning, and is supported by effective methodologies, learning experiences and assessment. ...The overall model is compatible with global trends towards integrating subject areas particularly in the early primary grades. At the same time, provision is made for students to pursue discrete subject areas as they advance in school. [Wesley Barrett – Chief Education Officer]

St. Lucia

... The organisation of the Content and Learner Outcomes under the headings, 'Understanding Basic Concept', 'The Nature of Science' and 'Science, Technology and Society' is not meant to imply that learner outcomes in one area of achievement are achieved independently to the learner outcomes in the other areas of achievement. Therefore, the teacher, in planning learning activities, should **integrate** learner outcomes from all the areas of achievement. In planning learning experiences for the students, the teacher must consider integrating Science and Technology across the curriculum. In doing so, the connection of Science and Technology to the real world becomes very evident. Integrating Science and Technology across the curriculum enables the students to see the usefulness of Science and

technology. When the integrated approach to learning and teaching is used, students' learning becomes more relevant and purposeful. Integration fosters the inquiry approach which results in greater understanding and satisfaction for students.

An examination of some of the subjects of the SEMP curricula of Trinidad and Tobago affirms this integration. In the suggested activities there are clear signals of integration with other subjects.

Trinidad & Tobago

Holistic and **integrated** approach is suggested for language and the teaching of language.

...(a) the inclusion of the category "integrating Curricular Activities" within the syllabus framework.

Consistent with the above curriculum model of Outcome-Based and Integration, Computer Assisted Instruction [CAI] is an example of the combination of both models. In Barbados, technology is **integrated** across subject disciplines.

Barbados

Technology is being used as a tool to foster **integrated** learning across subject areas.

Technological skills and competencies are taught from the primary to secondary schools in Barbados. The focus is on an **Outcome-Based model**. Specific targets are outlined for each grade level in various subjects. It complements the teaching/learning process. An important activity is the NET schools project. The project allows access to technology to persons of lower socio-economic levels.

Similarly, technology is **integrated** into all the units. Some primary schools already have computer laboratories and other technologies. Approximately, 150 Basic schools now have computers. It must be noted that technology is not confined to computers but includes a miscellaneous array of equipment such as radios, opaque projectors, film etc. The goal is to give all primary schools access to internet facilities. Classrooms are to be fully equipped with the most current multimedia apparatus.

Bahamas

Technology should be taught in an integrated manner and reinforced in content area subjects. This integration should be encouraged through the block of scheduling of strands. Construction of understanding through disciplined inquiry.

All territories have included computer-based learning activities as an integral part of their reformed curricula in the secondary sector, an extension of the primary sector. In all territories, the aim is to enhance student learning, to upgrade higher-order skills and to prepare them for life in the national and global communities. Workstations at selected schools are being installed with aspirations to equip all schools with these facilities.

The New Horizon Project [NHP] EdTech unit trained teachers, education offices, NHP associates, and parents in the infusion educational technology into the revised primary curriculum in Jamaica. Over the last two years there were training sessions consisting of 6 modules and 1 for sensitization. [<http://www.moec.gov.jm/projects/newhorizons/edtech.htm>]

St. Lucia also integrates computer-aided instruction [CAI] into its curriculum for the reasons outlined below.

The **integration** of ICT in the education system can eventually boost the economic engine of St. Lucia because courses developed

by St. Lucian educators can be exported. It allows students greater control over their learning and thus develops skills at their own level and speed. The potential of all individuals [including the mentally and physically challenged] can be enhanced by the use of multimedia packages and other electronic learning tools. [Integration of Information Technology in Education: Proposed Policies {Sept 2002}]

In Trinidad and Tobago, like the other territories, there are scientific and multimedia facilities to encourage student enquiry and hands-on activities, consistent with the constructivist learning concept.

Trinidad & Tobago

Multimedia support for the new curriculum including teaching/learning methods
Every school is getting (a) a multimedia learning centre consisting of a well-stocked library with reading material of genuine interest to students; (b) multimedia connectivity and Internet facilities to encourage wide-ranging student inquiry; (c) mobile information technology units to permit widespread use of limited information technology facilities; (d) access to circulating resource libraries for students in the respective Regional Divisions.

Computer laboratories are being installed, each initially with eighteen (18) workstations, but with a capacity for a maximum of forty (40) workstations. There are computer-based learning activities to upgrade basic literacy and numeracy skills and to develop higher-order skills. This will facilitate the use of computers as one of several media for teaching and learning. [*Secondary Education Modernisation Programme [SEMP] document p.7*]

In sum, the territories accept the notion that an integrated curriculum will facilitate a more student-centred approach to learning and teaching.

d) Flexibility

The general written intention of the curricula of the five [5] territories under review is to ensure that teachers take advantage of the full range of existing experiences and abilities in order to have students exploit these opportunities to achieve their full potential. The purpose of this is to boost achievement and commitment to learning. This would therefore require flexibility of choice of content and flexibility of delivery. Thus, flexibility and choice in the curriculum are essentials to meet the needs of all students and ensure the exploration of personal potential. **Flexibility** can be described as an aspect of curriculum designed to meet the needs and expectations of all students.

Curricula in the primary schools are relatively fixed. The flexibility of content is not as evident as in the secondary sector where there is a variety of choices. Information extracted from Bahamas and Jamaica primary curricula reflects those of all the territories under study. However, the curricula are so structured that they allow teachers to reshape them so that they will be responsive to students' experiences and needs. There is therefore, greater flexibility of delivery than of choice in this sector.

Bahamas

Each curriculum promotes opportunities for teachers to respond to students' intelligence, learning styles and learning preferences. As each curriculum is based on the expectation that all students can achieve the learning goals at all levels, all teachers are encouraged to become creative and **flexible** and to use the curriculum to build students' competence in the activities of real life. [*The Commonwealth of the Bahamas Ministry of Education - The Curriculum*]

Barbados has justified most pointedly its skills-based approach to Integrated Science in its Draft document to allow for flexibility.

Barbados

(b) allow **flexibility** with respect to delivery of content [Draft Integrated curriculum 2001 p. iv]

Jamaica

...modify the units to suit their particular pupils' needs/learning styles or local environment. The curriculum allows for the use of a wide range of materials and resources.

[<http://www.moec.gov.jm/divisions/ed/core/curricula.htm>]

The curriculum is child centered and child focused and is designed to help children establish their own identity as citizens of the world. It is **flexible** enough to allow teachers to adapt it to satisfy the varying abilities and learning styles of their pupils as well as the demands of their local environment.

[ACEO – Core Curriculum Unit]

Unlike the primary sector, flexibility in the secondary is flexibility of choice of subjects and flexibility of delivery. The primary science instructional programme

Bahamas

...promotes the activity-oriented inquiry-based approach... develops Process Skills and involves students in all aspects of the process of scientific investigation using the Scientific Method...

The Primary Science Curriculum Guidelines, used in collaboration with resource materials and recommended teaching strategies, cater to the variant and individual needs of students.

The physical layout, instructional charts, games and students' work should reflect what is currently being taught. The reading corner should offer a variety of materials from which students can choose. These may include, but are certainly not limited to, picture books, chapter books, stories, informational books (content related, language arts related, biographies), poetry books, newspapers, magazines, flyers and brochures.

And of the High school science

...basic concepts and attitudes of Science which explain the natural phenomena of this planet and the interrelationships of its organisms. Thinking and understanding Science are shared teacher and student processes and are addressed within the curriculum through a balanced interaction of "hands-on" activities, content and value-driven exercises

Flexible Strategies are (i) Projects [encouraging creative expression] (ii) Research [providing key information] (iii) Portfolios [organizing key information] (iv) Games [developing critical thinking/ problem solving skills] (v) Role play [developing critical thinking/ problem solving skills] (vi) Field trips (vii) Co-operative learning (viii) Peer

coaching (ix) Discussions & brainstorming (x) Utilizing multiple intelligences and learning style strategies.

Use of (i) Realia (ii) Computers **[technology]** (iii) Learning centres (iv) Tape recorders (v) Audio and video cassettes (vi) Overhead projectors (vii) Television and video (viii) Instructional software
[<http://news.bahamaseducation.com/>]

In Barbados, the Ministry of Education proposed that the revised Secondary curriculum be flexible, thereby allowing students to pursue compulsory core subjects in addition to foundation courses and electives. These will be complemented by enriched activities for which credit will be given.

Barbados

Compulsory core subjects (1) Communication – Language and Literature in English (2) Numeracy and Mathematics (3) Natural Sciences including Integrated Science (4) Social Studies (5) Modern Languages (6) Physical Education (7) Moral and Religious Education

Foundation studies

Students to study at least ONE of (1) Social Studies (2) Visual Arts (3) Performing Arts – Music, Dance, Drama (4) Information and Communication Technology (5) Design Technology (6) Woodwork (7) Metal work (8) Technical Drawing (9) Home Economics

[Curriculum 2000: Rationale and Guidelines for Curriculum Reform p. 31]

Barbados's reformed Curriculum attempts to cater for the various learning styles and learning needs. The Curriculum is divided into six [6] levels. The entry into secondary school could be at Level 1 or Level 11 dependent on the students' needs. Essentially Level 1 helps in bridging the gaps of basic skills and competencies missed in primary school and which are necessary for success in the secondary sector. Level II will be the first point of entry for those who have effectively acquired those skills and competencies and will focus on the compulsory core areas and foundation studies. Level III is an extension of Level II. Level IV will participate in foundation studies and limited specialization of selected electives. At the end of Level V students will be examined on the exit competency tests in two (2) core area – Language Arts and Mathematics and two (2) electives. Level VI will be for those students who are writing the summative examination of the Secondary Examination Council [SEC.]

In the upper Levels IV to VI, students will be able to choose from a range of options which match their interest, abilities and career goals consisting of

Electives are (1) History/Geography (2) Biology (3) Physics (4) Chemistry (5) Agricultural Science (6) Integrated Science (7) Foreign Language (8) Visual Arts (9) Performing Arts- Music, Dance, Drama
[Curriculum 2000: Rationale and Guidelines for Curriculum Reform p. 31]

Students with special skills and abilities will be involved in ONE enrichment activity

Enrichment Activities are (1) Athletics (2) Sports and games including board games (3) Clubs – Academic, Social, Religious and service (4) Voluntary organization (5) Brownies (6) Club Scouts (7) Girls (8) Guides (9) Cadets (10) Rangers

[Curriculum 2000: Rationale and Guidelines for Curriculum Reform p. 32]

Consistent with flexibility of content, Barbados enunciated flexibility of assessment by declaring options to those students who wish to access university education to stay in school for two additional

years after writing the Barbados National Diploma of Secondary Education [BNDSE] to prepare for CXC General Examination. Alternatively, some may continue on a part-time basis to prepare for CXC after the BNDSE. Moreover some may continue to post-secondary training since the BNDSE should be adequate enough to allow them to pursue that kind of post-secondary training. Furthermore, the modular format of the curriculum should empower students who completed the Certificate of Completion to pursue the National Diploma at any future stage of their lives by participating in adult continuing education programmes available to them in either the private or the public sector [Curriculum 2000: Rationale and Guidelines for Curriculum Reform]

In Jamaica, at Grades 4-6, the format changes to discrete disciplines

Jamaica

(1) Drama (2) Language Arts (3) Mathematics (4) Music (5) Physical Education (6) Religious Education (7) Science (8) Social Studies (9) Visual Arts

[<http://www.moec.gov.jm/divisions/ed/core/curricula.htm>]

with thematic integration across subject areas being encouraged in the pupils' project and research work.

Another interesting example of flexibility of delivery in Jamaica is the **multi-level** with three levels. First level is the Foundation. The second level is Normative and the third level is the Enrichment. The content will be similar to all students but the activities will be adjusted to fit the stages of development of the students of the class.

Jamaica

All students should pursue a compulsory core of six subjects, including Information Technology (that may or may not be taken as a subject for examination) and a set of activities constituting an expanded school experience. The six subjects proposed are (i) English (including Literature) (ii) Mathematics (iii) A Social Science subject (iv) A Natural Science subject (v) Information Technology

The core subjects for special education schools are to be determined by these schools and technical/vocational schools will be advised as to their core subjects.

In addition to the core subjects, students may choose from one of four options: (i) The sciences (ii) The humanities (iii) Technical and vocational subjects (iv) Visual and performing arts.

The expanded school experience will allow for the inclusion of critical areas such as: (i) Personal development (ii) Guidance and counseling (iii) Physical education and sport (iv) Clubs and societies

Additionally, there will be new courses to satisfy the need for the expanded school experience such as: (i) Civic responsibility (ii) Work ethics (iii) Values and attitudes (iv) Community service

[<http://www.moec.gov.jm/projects/bsp/index.htm>]

As an expansion of this concept, provisions are made for students who will discontinue secondary education after the first cycle Grade 6. There is sufficient flexibility to provide opportunities for them via pre-vocational education so that they will be acceptable to employers or employment and training.

They are exposed to

(1) Mini projects/Mini Business (2) Exploration of the environment (3) Work experience (4) Intergenerational programme (5) Using films (6) Resource persons (7) Analysing jobs

[<http://www.moec.gov.jm/divisions/ed/core/curricula.htm>]

In St. Lucia, Government's policy is to make Technical and Vocational Education and Training [TVET] a credible component of the secondary and post secondary school levels, to allow for greater flexible combinations so that pupils can be exposed to a wider selection of choices. It is also hoped that this would encourage proper attitudes and assist in a more realistic progression to further training and consequently employment. [*Technical and Vocational Education and Training (TVET) Development Support Project, <http://www.education.gov.lc/edu/project/tvet.htm>*]

The students who have not succeeded the Common Entrance at the end of primary school and who have not exhibited the prerequisite skills and knowledge for the secondary sector will also be given a chance to prepare themselves for further learning and employment. They will be exposed to

...creative, analytic and problem-solving skills which will support and enable the development of income-generating skills, through the following subjects: Family Life and Counselling, Home Economics, Agriculture, Industrial Arts, Computer, Literacy, Numeracy, Social Studies, General Science, Music/Art/Craft, Physical Education, Plumbing, Electricity and Repairs to Small Engines.
[<http://www.education.gov.lc/edu/project/13plus.htm>]

Attempts by the Trinidad and Tobago's Ministry of Education to create **Magnet** schools are based on the premise that students have different strengths and as such would learn more effectively if they attend institutions that cater for those intelligences. Accordingly, an initial six schools are being established, one for each general subject area.

- (a) Science with an emphasis on marine sciences and petrochemistry
- (b) Visual and performing arts
- (c) Technology education
- (d) Information technology
- (e) Humanities and aesthetics
- (f) Sports and physical education

These reformed curricula attempt to cater for the learning needs and styles of students.

These schools are expected to serve as leaders in the secondary school sector, spearheading inter-curricular approaches, project-based learning and team teaching. However, according to Trinidad and Tobago Unified Teacher Association [TTUTA] there are deficiencies.

- Technical Vocational subjects are omitted from the SEMP curriculum, when such subjects should be included there to cater for diverse learning styles;
- No proper programme or curriculum has been developed or put in place, especially in the critical subject areas of remedial reading and mathematics for the Forms One Special;

[http://www.ttuta.org/prodevelopment_universalsec.html]

The Caribbean Vocational Qualifications [CVQ] is another stream for students from Form 4 to 6 Secondary School and not from Forms 1 to 3 SEMP curricula. The CVQ offers a broad based programme for employment and/or an alternative route to further and higher education. It is to run parallel to the Academic Stream. Students can terminate the programme at Form 5 and enter the world of work or they could continue to Form 6. CVQ does not exclude academic subjects. Students may select some academic subjects while offering the CVQ. It is therefore meant to allow for more flexible choices of subjects for students to facilitate vertical and horizontal mobility.

Special Education

Interestingly, Bahamas has accommodated a curriculum for Special Education

The Special Education Unit is mandated to develop and implement programmes for all children, particularly those with special needs.

The prime purpose of this programme is to enable students with special needs to receive assistance from the special education teacher in Language, Reading, Mathematics and Writing without being removed from the main stream of the educational system. Special Classes or self-contained classes are used most often for students with moderate to severe learning disabilities. The special education teacher provides most or all instruction. Students are in most cases separated from the regular classroom.

In Barbados, the revised curricula integrate students with special needs into the mainstream. This is to ensure that students with special needs who can be integrated or benefit from integration receive the education consistent with their skills and abilities.

The Ministry of Education claims that in September 2004, Student Support Service Systems were established in the eight education districts in Trinidad and Tobago and more than 75 primary schools have already benefited from these services. This system allows for diagnostic and prescriptive services, guidance, counseling, social work and special education services. Each year a small percentage of students with special educational needs enter secondary school. In Trinidad and Tobago, TTUTA argues that "Critical support structures, for teachers to teach remediation to this small percentage students are absent." [http://www.ttuta.org/predevelopment_universalsec.html]

It is worth noting that although the Ministry of Education articulates the benefits of inclusion of students with special needs, it admits that this inclusion is a gradual process that demands systematic changes in the education system, changes which are currently incomplete.

It is remarkable that all territories though seeking to provide a variety of learning experiences for their students with special needs have no distinctly clear pathway outlined in their curricula. The impression is that in the reformed curricula, education for the spectrum of special students does not form an integral part of their reformed processes. There is no evidence from the Curricula to suggest otherwise.

2. How are the Curricula implemented

a) How are the curricula managed in schools

A sample of studies in Jamaica, St. Lucia and Trinidad and Tobago assist in determining how curricula are managed in some schools. In Jamaica, officers of the Unit to the Functional Education (Primary) Section collected data from questionnaires and observation of teaching in primary schools. The report represents one hundred and eight visits from March 2003 to March 2004. The findings reveal strengths and weaknesses of teacher implementation of the new classroom techniques suggested in the reformed curriculum. The strengths and weaknesses varied from school to school and from class to class. There were few schools in which all or most of the suggested teaching activities and techniques were consistently and effectively implemented. This comment was applicable to lesson planning, learning styles, application of student-centred approaches, student-teacher interaction, classroom atmosphere and integration of technology. To clarify, an example will suffice. In any one school the observer may see differential levels of application of effective management of the curriculum. For example, in some classes the observer may report that there were good lesson plans but poor delivery or classroom management and in another class in the same school the reverse may be true. Similarly, another observer in another school may report excellent teacher-student interaction but poor lesson planning or integrated technology or poor lesson delivery but excellent classroom charts. As well, in another class the observer may find excellent lesson plans, excellent lesson delivery, excellent child-centred activities and relevant assessment and evaluation. [See illustration below.

SCHOOLS	STRENGTHS/ ACHIEVEMENTS	WEAKNESSES/ NEEDS	OTHER COMMENTS
Mona heights Primary	All Grade 1 and 4 teachers trained in RPC.	Two of five Grade 2 teachers trained to implement RPC [Revised Primary Curriculum]	
	Common Planning Time in place [weekly] different time for each Grade	Four of five Grade 5 teachers trained in RPC implementation.	
	Principal and staff accommodating	All Grade 4 teachers trained. 4 of 5 Grade 3 teachers trained	
	Students worked with some degree of autonomy	No lesson plans for Grade 1 [GR 1 was being done]	
		A case of misunderstanding of integrated lesson planning	
		Teacher-centred Grade 1 Language Art Window	From last academic year's plan
		No Grade 4 lesson plans	
		Grade 4 assessment traditional.	
		Grade 4 teacher-centred	Language Arts greatest challenge for Grade 4 teachers
		No daily evaluation or breakdown of activities for Grade 5 Language Arts	
		Need expressed for Religious Education, Social Studies and Mathematics resource books.	
		Close seating	
		No CIT in place	Was to be put in place shortly

[Report on School visits carried out by Primary Education Support Project 2003-4 MOEYC p.16-17]

The data from these observations imply that in any one school there is no consistent or uniformly effective management of the curriculum and this in spite of rigorous in-service training of the teachers. In addition, it was noted from the data, that although there were many teachers who were exposed to training of some kind, there was no positive relationship between the number of teachers who were trained and effective management of the curriculum. It may be concluded that many of those teachers who were subject to some kind of training in-service or otherwise did not implement what they learned in their training.

In St. Lucia, Teachers from Sir Arthur Lewis Community College researched one aspect of the curriculum viz assessment. One such study by Bertilia Fevier [1997-1999] investigated the assessment practices in Mathematics used in the Primary schools in the Soufrière area. The findings of this study revealed that the teachers claimed to use methods that are in harmony with those used by the Ministry but in reality this was not so. She found that the assessment practices focused mainly on paper and pencil tests, informal oral questions, board work and formal observations.

Similarly, Carmelita Mathew [1997-1999] investigated methods of alternative assessment employed by the teachers of Grades 1 to 5 of the Ciceron Combined School. The researcher found that in general there was a desirable attitude to the new assessment processes but planning, making and recording information by teachers were inadequate. The data also showed that there were variations

in the use of alternative assessment methods among teachers within the same grade level and in different grade levels.

Joyceline Nupial's [1997-1999] study on assessment of modes of thinking and the influencing factors in Social Studies in West Vale Combined School in Education District Two found that although teachers focused on a wide variety of assessment strategies, there was little evidence of self assessment. The study also found that training and teachers' experiences facilitated assessment of modes of thinking. By contrast the study states that school organization, work load and external examination had a negative effect on modes of thinking.

Sabina Allain [1997-1999] investigated the planning and implementing of methods of assessment used by mathematics teachers in Grade IV in Soufrière, and teachers' and students' perceptions of the usefulness of those methods. The study revealed that generally, the teacher's main purpose for assessing Mathematics was to ascertain students' level of achievement. The techniques used by teachers in that process were testing, oral questioning, class exercises and home work. Teachers did not always follow the recommended procedures in their planning and implementation of assessment methods suggested by the Ministry. The study also found that teachers have a high perception of the usefulness of classroom testing and personal communication and a low perception of the usefulness of performance assessment. Students, however, had a perception of the usefulness of some methods of assessment.

In Trinidad and Tobago, a qualitative study of the SEMP Language Arts Curriculum was done by Nicha Selvon-Ramkissoon, Faculty of Humanities and Education, UWI, St. Augustine. In this qualitative study, four teachers from a Junior Secondary School in East Trinidad were interviewed. The teachers had all been exposed to some form of training. Two were graduates of Mausica Training College; one pursued the Diploma in Education at the University of the West Indies [UWI]. All have had in-service training facilitated by the Ministry of Education specifically targeting the needs of the SEMP curriculum.

All four teachers agreed that the curriculum would be of benefit to the children of the Junior Secondary system. They felt the curriculum offered 'creative, beautiful ideas'; 'a practical approach with teacher as guide – students trying to learn for themselves with us just giving them the nudge'; 'more interesting lessons that allow children to detoxify from the chalk and talk'; 'group work and innovative ideas'; and 'a better development of oral and listening skills'.

...All the teachers spoke of problems with time, unrealistic expectations and resources. They felt that 'there were too many topics to finish in the term. A lot of planning had to be done on your own time'; 'it is too broad to teach all in one year – too ambitious'; there is an inherent disadvantage at the Junior Secondary.....One teacher expressed it this way. 'At first it was quite intimidating to make sense of the madness that seemed to be happening ...at times we were not even too clear if we were even doing things the right way'. [p. 10]

In spite of these initial perceptions, the teachers managed the curriculum with help from their colleagues especially the Head of the Department, the Principal and the Ministry of Education who supported the innovation by involving teachers in the preparation of the syllabus, co-ordinated workshops and provided booklets and other printed material. The teachers thought that the Principal needed more assistance in understanding the full implication of the implementation of SEMP.

Two of the teachers who applied music, drama, portfolios, journal writing and group work before the innovation found it easy to implement the suggestions in the SEMP curriculum. Group work was

particularly rewarding to them. They concluded that change is transformational and requires patience and adaptability. They also stress that the biggest problems were supplies and teaching equipment.

b) Professional preparation

In a reformed curriculum, professional preparation is a critical component. Teacher education "refers to all arrangements for the preparation of teachers and administrators for the task of facilitating the educational process in schools. This includes that education which the teacher receives before being placed in the classroom, referred to as pre-service teacher education and the continuous education of the teacher throughout the career of the teacher, which is referred to as in-service teacher education.

Professional development involves a process of continuous growth through which individuals develop and restore their capacity to function effectively in their vocation and in society.

[Discussion paper April, 2005 *Preparing High Quality Teachers for a Changing Society*, Teacher Professional Development Unit, Ministry of Education, Trinidad and Tobago, p. 8.]

"In its broadest definition professional development encompasses what teachers bring to the profession and what happens to them throughout their careers" [Fullan p. 289]. The purpose of Teacher education is to ensure that the teacher as learner has the knowledge and skills needed to teach any curriculum but more urgently a reformed curriculum. Teacher education must identify the expected outcomes, the resources needed and a timeline for ongoing activities and completion. It must be perceived as a "continuum of learning" [Fullan p. 289]

To meet the demands of the revised curricula, teacher training, retraining and development are critical and pivotal components. In all the territories named in this study, there are clearly outlined teacher training policies and ongoing training, but the means of doing so vary. In Barbados, teachers and principals are assisted in managing the reformed curriculum by training and professional development sessions conducted by Education Officers from the Ministry of Education, tutors of Erdiston College and Audio Visual Aids' tutors and officers. Teachers are not only trained in methodologies but in the fundamental changes expected to be brought about by the reform process.

A similar development occurs in Jamaica since professional training is a fundamental activity to the success of their reformed curriculum. Over 1340 Grade 2 teachers and over 1220 Grade 5 teachers have been trained in the use of the Revised Primary Curriculum. Cluster training was organized for teachers of all Grades from 1 to 5. Additionally, a mentorship-training manual has been developed and mentors trained. Plus, summer orientation workshops have been established and demonstration schools worked with Teachers' Colleges to develop Action plans for the schools.

Jamaica

To support the implementation of the plans, schools will receive both professional and financial assistance. Professional support will be provided through visits at critical times in the planning and implementation stages. There will be further training and support, too, which will take place to facilitate the review of the plans in years two and three of the project.

[<http://www.moeyc.gov.jm/projects/jaasp/planning.htm>]

Bahamas's Tertiary/Quality Assurance Division is mandated to provide for training future teachers. Among its goals and objectives with respect to teacher training are to

- provide the necessary financial support which would enhance the provision of a cadre of trained teachers for the education system while they pursue studies at The College of The Bahamas
- assist in the identification of serving teachers desirous of pursuing advanced studies abroad
- provide the necessary assistance/support to The College of the Bahamas in the teacher training process relative to the supervision of pre-service teachers while on teaching practice
- ensure that the disciplines chosen for study by prospective teacher trainees at The College of The Bahamas relate to the needs of the education system;
- ensure that through the future Teachers of the Bahamas and other programmes there is a reasonable and ready number of teachers in training at The College of The Bahamas to augment the needs of the education system on an annual basis

Noteworthy in Trinidad and Tobago especially because of the significance of teacher training to the implementation of a reformed curriculum, there is no evidence of specific training of primary school teachers at the two teachers' training colleges designed to cater for this need. An excerpt from the research done by lecturers at the University of the West Indies [UWI] School of Education underscores this.

“While the syllabus rationale suggests the importance of a whole language approach to language teaching, the documented contents of different topics within the unit seem to emphasise a less integrated, and a more rule- and skill- based approach. The syllabus notes, for instance, that “the mechanical stands side by side with the processual and creative elements of language teaching,” where whole language approaches generally tend to subordinate mechanical concerns, to a greater or lesser extent, to issues of process and meaning- making.

The stated objectives of the topic “grammar” also seem to focus more on making student teachers aware of different syntactic structures and rules within English Creole and English systems which must be used when communicating (usage) than on awareness of the integral relationship between structures and communicative contexts. Yet the overview of course content refers to “the importance of grammar in communication” which suggests a somewhat broader interpretation. [MUSTER]

The above finding points to a disconnect between the provision of training at the training colleges and the reformed curriculum. Another example, of this disharmony, is in the revised syllabus section on Language skills

In spite of the recognition of the **interconnectedness of language skills**, language skills, teaching language has been characterized by fragmentation and division among the language modes.

For example, during the school day time slots are designated for reading, spelling, punctuation, handwriting and composition. This fragmentation of the language arts promotes an unrealistic view of language and language learning. [GORTT/IBRD Basic Education Project Primary School Syllabus (Infants 1 & 11 and Standards 1 & 11 p. vii)]

Similarly, the revised science curriculum is at odds with the Training Colleges Science curriculum. The curriculum of the training colleges should reflect the revised curriculum which the trained teachers are to teach. Furthermore, the curriculum should not only be about content of the revised curriculum but should engage in learning how to teach the new revised curriculum. It should be supportive of the learning skills required of the reformed primary curriculum.

Significantly, in the secondary reformed curricula, in Trinidad and Tobago a Professional Development Co-ordinating committee was established. It is estimated that over a seven year period, the new curriculum SEMP will have trained approximately 5,800 teachers, and principals. The purpose is to equip them with the knowledge and skills not only to be able to implement the proposed changes but to implement them effectively. Note below the professional training activities which took and are taking place.

Trinidad and Tobago

Professional development coordinating committee established.

Training sessions for new school administrators.

Teachers trained in transmissive, transactional and transformative methods of teaching and learning.

Three phases of Reading Readiness programme for teachers completed. Teachers also trained in delivery of new curriculum.

Two 1-day curriculum writing workshops held with international consultant dealing with **integration** of new learning strategies into existing system.

Seminars held with principals, supervisors and curriculum officers to introduce concepts for marking, certification and standard-setting.

Curriculum-writing teams and teachers of the Field Testing Schools trained in principles of assessment, procedures for developing criteria, writing assessment activities and scoring procedures.

Orientation seminars with principals of Field testing schools and school supervisors on **integration** of assessment in instruction activities.

According to the recent statement it was admitted that the majority of teachers in secondary schools are still untrained. It is hoped that this will change with Valsayn and Corinth Teachers Training Colleges coming under the newly established University of Trinidad and Tobago [UTT] whose mandate in this area will be to accelerate teacher training. There is a proposed four-year programme of training with one year internship with emphasis on teaching "skills". This new initiative aims to reduce the number of untrained teachers. [*Daily Express, 16 December 2005 p. 6*]

Trinidad and Tobago Unified Teachers' Association's [TTUTA] investigations identified several gaps in training and Professional Development. They urge the Ministry to review their teacher training programme so as to incorporate special teaching training needs for special students. On TTUTA's website, it is said that:

- No specialized training has been offered to teachers in the system to help them deal with the special needs of students in the Forms One Special;
- In the Forms One Special, SEMP schools and Secondary Centres, the lack of appropriate teaching and learning aids means that students are exposed mainly to academic subjects while their needs may demand otherwise.

[http://www.ttuta.org/prodevelopment_universalsec.html]

TTUTA's contention is supported by Ms. Lydia Jones, Special Education Specialist at the Teacher Education Symposium, August 18-19th 2004. In her contribution, "The Training Experience – the Special Education Perspective", she questioned the preparation of the trained teachers to deal with the 'student population who exhibit inadequate achievement, inappropriate school behaviours, poor memory, poor attending behaviours, inadequate organizational skills, poor self concept and high intelligence quotas.' [*Teacher Education Symposium Report, Teacher Professional Development Project Unit, Ministry of Education, Aug 18-19, 2004. p. 22*]

In light of the importance of technology in the curricula of all the territories, teacher training in technical skills and application of those skills to learning is crucial. In Barbados and Jamaica, Microsoft Certified Professional Training is offered. In Barbados, this advanced training is now mandatory for the teachers who are serving as Information Technology Co-ordinators at their respective schools. [*MOEYC National Report on the Development of Education in Barbados, July 2001*].

There are similar initiatives in The Bahamas, Jamaica, St. Lucia and Trinidad and Tobago. The extent and effect of these initiatives could not be ascertained at the time of writing this paper. The general notion among all the territories is that continuous, systematic and systemic change is not taking place at the rate it should to make a significant difference in spite of all the many and varied programmes, current research, new knowledge and new technologies.

c) Strengths and Challenges

The strength of the curricula is the carefully planned, clearly outlined and clearly focused aspects. So the greatest challenge is to convert these written curricula to effective learned and taught one. A great challenge is not only to develop a critical mass of well trained teachers but a critical mass of well trained teachers who will implement their training effectively to make a significant difference to learning. Incongruence between teacher skill and the skills required by a reformed curriculum is another challenge. These unmet challenges result in non-attainment of targets.

If teachers are inadequately trained and not made to buy into the reformed student-centred classroom, the reform process will ultimately be undermined by teachers' regression to traditional and more comfortable teacher dominated instruction techniques.

Major challenges of implementing the constructivist approach and activities come from perceptions of (i) students and (ii) parents. The perception of students is that the required group participatory work, the 'self-help' learning and the move away from teacher instruction to teacher facilitation create the view that learning is not taking place. The parents expect that school will be as they experienced it and their children will be involved in more teacher 'chalk and talk' and teacher 'guru' activities. To them also, a reformed constructivist approach also suggests a lack of learning. These perceptions and attitudes change, create barriers to achieving the goals of a reformed curriculum.

There are many challenges to training in the new teaching methods consonant with the constructivist student centered learning and the stated curriculum models viz.(i) selection of the right training model consistent with the context e.g. Online, Pre- or In-service Training Models, a combination of two or three or a more eclectic model (ii) allocation of time for the training depending on the model chosen (iii) problems of distribution of resources for teaching support (iv) improvement of teaching and learning conditions (v) training of Principals and teachers to keep student data for research the results of which should be an integral part of the feedback loop of the cycle of Performance objectives, Instructional strategies, and Assessment.

It is well established that a well designed revised curriculum does not guarantee change. There are many barriers to curricular reform. Reform requires knowledge, skills on the part of the teachers, resources, and commitment on the part of the framers or Central body who commissioned the change. This is evident in a review of the territories with revised curricula. Barbados has recognized that a lack of resources has inhibited the implementation of some of the activities identified in the

revised curriculum. For example, little or inappropriate resources can affect implementation of reforms. **Lack of resources can vary from territory to territory and from basic resources like chalk including and especially coloured chalk, chalkboard, to white board, white board markers, flip charts, text books, encyclopedias, simple libraries, to the more sophisticated overhead projectors, slides, video player/television and multi-media projectors, screens and computers. For more practical subjects like Science, Electronics etc there is the absence of simple apparatus and equipment in sufficient quantities and supplied in a continuous manner as to allow students to experience the related practical work.**

This is true of all the territories under review in this study. Thirty-four [34] Jamaican primary school teachers in interviews reported that the main obstacles to using innovative practices that they learnt at workshops were lack of materials/resources, large class size, insufficient time allotted to subject areas and lack of access to computer laboratory for some pupils. They also emphasized that they needed more assistance in

- Lesson planning and teaching strategies
- Teaching the Integrated lesson
- Teaching children of varied abilities

[MOEYC Report: Analysis of Teacher interview prepared by Mathematics & Information Technology Section 2004-06-01 p. 29].

Research in St. Lucia identified the following as impediments to learning in the primary schools.

- lack of physical space to implement individual special needs programs;
 - inability of some teachers to cope with students of varying abilities in the same class;
 - lack of teacher expertise in remediation;
 - large classes which hamper teachers ability to attend to the needs of low performers
- http://www2.unesco.org/wef/countryreports/saint_lucia/rapport_4.html

In addition the limitations of any infrastructure can be a hindrance to education reform. Unfamiliarity with the requirements of the curriculum documents can also negatively affect the reform process.

Barbados has embarked on many strategies to remove the impediment to curricular change. They are (i) encouraging principals to be instructional leaders and create a facilitating climate which would foster curricular change (ii) Erdiston Teachers' Training College has custom-made workshops to address pedagogy needs. (iii) Schools which have been identified with inadequacies have had in-house workshops. (iv) Indicating model schools as exemplars of the effective implementation of the reformed curriculum (v) Workshops for technical/vocational teachers to be able to utilize the limited resources effectively.

In a statement in the SEMP booklet, Trinidad and Tobago acclaimed that during its first year there were attempts to ensure quality by holding fifteen [15] stakeholder conferences on SEMP curriculum. In addition a master plan for curriculum development was produced. Concurrently there was a Readiness Pilot Programme in four schools. The Instructional Materials Development Unit was established and in August 2000, a training institute for new teachers started during which samples of assessment activities corresponding to the learning objectives of the core subjects were illustrated as prototypes.

At the Teacher Education Symposium in August 2004, the Honourable Minister of Education, Senator Hazel Manning, in her address recognized the importance of teacher education and had the following to say

The Ministry has also been conscious of the need for teacher education reform especially at the primary level. As such the Teacher Development Project Unit has been set up since April 2004 to upgrade the standard of teacher education at all levels of the

education system in Trinidad and Tobago. This unit has to develop recommendations for establishing a single entity to coordinate activities related to teacher education and development, which would take into account teacher training, recruitment and quality assurance. The unit also has to develop a rationalization plan for teachers' colleges. [*Teacher Education Symposium Report, Teacher Professional Development Project Unit, Ministry of Education, Aug 18-19, 2004. p. 14*]

Another challenge is how to create and administer curricula which cater for a diversity of learning needs: curricula which are inclusive of all students especially those with learning problems and those who are considered 'special learners.' This is not an easy approach but it is one with which territories must wrestle since it is an inescapable fact that education change is crucial to a larger societal transformation and no child should be on the margins or omitted from the educational system if one wants to ensure a positive transformation. The challenge will be how to re-focus and re-examine the curricula to be flexible enough to allow for a variety of learning styles and a wide variety of special needs.

d) Curricula and Assessment

Quality assessment systems

Curriculum Monitoring

In this age of school reform and the drive to upgrade standards, curriculum monitoring is very important. It churns up data which could be used for improvement, strengthening or reconstruction.

Curriculum monitoring is the establishment of a process for ensuring that some or all aspects of the curriculum are being implemented. It could include the steps and timeline for the process, the person(s) who will be responsible for monitoring classroom instruction, what records of classroom monitoring will be kept, and the resources needed for monitoring the taught curriculum. [*Adapted from Louisiana Department of Education*]

In Barbados, monitoring is the responsibility of the principal in consultation with teaching staff. They organize, implement and evaluate the curriculum at each level. The monitoring process guarantees that there is support for teachers during the pilot phase. An audit of schools' resources, content and pedagogy is performed so that strengths and weaknesses and students needs could be identified. School based sessions and an assessment of the physical environment and its impact on the instructional process are then implemented. In response to the gaps identified, in-service training is put in effect. The result of monitoring must be substantial progress on the implementation of curriculum reform.

Jamaica maintains that the monitoring of their revised curriculum is an on-going process, and uses a variety of techniques in order to show evidence of learning.

A report on school visits carried out under the auspices of the Primary Education Support Project 2003-4 is a summary derived from the qualitative data accumulated from school observation visits by school related officers. Officers were assigned to observe the strengths and weaknesses of the implementation of the core curriculum. A summary of the findings of the report suggested that the national implementation of the Revised Curriculum up to March 2004 was not without its challenges. Major challenges reported were linked to the preparation of acceptable lesson plans, with all the required components (including evaluation) present and aligned.

Child-centred delivery and the provision of resources were also major challenges for the teacher.

There were many achievements and gains, among them the institution of Common Planning Time in most schools, and the preparation for and delivery of pupil-centred, well managed lessons by teachers who gained a high level of competence in the implementation of the Revised Primary Curriculum. [MOEYC Core Curriculum Unit Report 2004-07-17]

A summary of the weaknesses and strengths reported [in at least five schools] reveal that the strengths were classroom environment conducive to learning; common planning time in place; well-written lesson plans; a variety of teaching strategies used; articulation/alignment between Windows and Integrated studies; good teacher-pupil interaction; formative assessment used to inform teaching; good delivery; good management of instruction; evidence of integration at Grades 4-6. On the flip side, the main weaknesses were absence of evaluations from lesson plans; alignment of elements of lesson plans; lack of competence in planning and delivery; absence of appropriate resources; absence of plans; need for more child-centred activities; classroom not conducive to co-operative learning; lack of mastery of delivery [integrated curriculum]; all or some teachers at Grade level not trained. This information and issues of education are compiled from stakeholders such as principals, teachers, students, parents and community members and based on these, recommendations are then made. In addition, the monitoring of the implementation of the Revised Primary Curriculum revealed that 85% of the teachers attended the Summer Orientation workshop, 20% the Cluster workshop and 11% the Assessment workshops. [MOEYC Core Curriculum Unit Report 2004 p. 28-30]. These recommendations are fed back into the design of the project to promote the desired equality, equal access and thus help each student to benefit from Reform of Secondary Education project, ROSE 11.

Of significant note is the computer intervention. An evaluation of the project showed that this activity has had positive effects on students' visual motor co-ordination, visual and auditory perception, number and letter knowledge. Moreover, it was found that school attendance and parental involvement in school activities have improved as a result of Computer Assisted Instruction. [<http://www.moec.gov.jm/projects/bsp/index.htm>]

In Trinidad and Tobago the primary school curriculum was also reviewed to confirm that students are adequately prepared for studies at secondary school. Data on the results of the taught curriculum are also gathered and reviewed. [Report on National Test 2004, Ministry of Education, Division of Educational Research and Evaluation]

In the first year of the SEMP programme, the curriculum was monitored to ascertain the weaknesses and strengths of the programme so that adequate revision and reform could be achieved. According to the Ministry of Education, monitoring of the curriculum is an integral process of curriculum implementation.

Monitor: It is at this stage that offers visit schools to verify that classroom practice is consistent with the established goals and objectives of the national curriculum. Data is gathered to inform policy and decision making relative to the curriculum. The monitoring activities also capture best practices for generalization and develop the working relationships between officers of the Curriculum Division and school personnel, allowing for technical support at the school level to be provided where needed.

Evaluate: In this stage, officers engage in analyzing data collected on the field to determine the effectiveness of the curriculum design

and its implementation as they relate to the child. It is the findings of this exercise that directly influence the final stage of review.

Review: The information gained from data analysis is used to guide appropriate adjustments to the curriculum documents. Such adjustments incorporate any apparent weakness of the implemented curriculum. Because of technological developments and the resulting ease with which new information can be shared, continuously evolving curriculum is now possible. Updates, links to resource material and successful teaching and learning experiences can be easily incorporated in curricula. These considerations are all geared toward curriculum improvement and improved student performance in meeting national development. [*Daily Express, Section 2 Tuesday 14th February 2006, p. 4*]

Curriculum design and management are complex processes. Changes in any element force changes in other elements. Assessment in a reformed curriculum whose conception of learning is Constructivism and whose curriculum model is Outcomes Based must align its assessment with the conception of learning and the curriculum model. Assessment is an integral part of curriculum implementation. Assessment is the process of collecting information and recording students' responses. It is a fundamental part of curriculum delivery.

The goals of assessment reform are for monitoring student progress, ensuring there is alignment of objectives, content and instruction, ensuring teachers' accountability for student performance and influencing instructional practices by using the results for shifts in teaching such as individualizing learning and remediation. Therefore these results should be reported in a manner which will provide adequate information for doing so. One must also recognize that the purpose of assessment must be different at various times in the learning process in order to cater to the varied teaching activities, the varied syllabus content and the purpose of the assessment.

In the Bahamas summative assessment of the curriculum is as follows;

All students of grades three (3) and six (6) in the primary school, write the **Grade Level Assessment Test (GLAT)**. An individual diagnostic report is generated for each student. Two examinations are written at the high school level. At grade nine (9) students sit **The Bahamas Junior Certificate (BJC)** examination and at the end of their high school studies students write **The Bahamas General Certificate of Secondary Education (BGCSE)** examination.

[<http://news.bahamaseducation.com/>]

Barbados' internal assessment procedures, designed to document students' progress, range from informal classroom and homework exercises to formal end of term examinations. The results are used to determine promotion and the type of promotion. Juxtaposed to the 'traditional tests', assessment reforms consist of continuous assessment as an integral part of instruction and for monitoring student progress and certifying student skills and achievement. Constructive learning requires authentic experiences and activities. Assessments should be also authentic.

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More authentic assessments which are based on a combination of both process and product methods (orals, interviews, peer and self assessment, performance assessment, exhibitions, portfolios and project-based work, written achievement tests and norm-referenced tests).

Authentic assessments are designed to provide a broader view of student learning through the evaluation of performance on actual tasks. Portfolios, performance-based tasks and observations are methods through which authentic assessments of student performance are collected.....authentic assessment strategies require student to demonstrate their knowledge through the completion of actual tasks. Portfolios provide selected works showing the development of students' learning over a period of time. They demonstrate the process that provides a picture of the student's changing performance.

By implementing authentic assessment strategies, students become active participants in the process of assessment. As they become involved in their own learning and assessment, the process transforms into a tool for learning. Another of the hallmarks of authentic assessment will be the heightened participation of parents in the process. *[Curriculum 2000 p.11]*

Continuous assessment will be another means used to assess pupil performance at the primary level and along with the BSSEE [Barbados Secondary Schools Entrance Examination] will be used in transferring students from primary to secondary school. The Ministry will implement all mechanisms necessary to standardize tests and marking in all schools, and in all subject areas to ensure reliability and consistency in the results obtained from the continuous assessment. *[Curriculum 2000 p.26]*

Also, like other Caribbean territories, at the end of Grade 6 or end of primary school, all students are examined on acquired knowledge and skills.

There will also be a Barbados National Diploma of Secondary Education [BNDSE], a major change in assessment. The main feature of this innovation will be school-based assessment and exit competency tests. This exit competency assessment will be in the following learning areas

Natural Science, Modern Languages [Conversational Spanish or French] and Social Studies **at the end of Level IV**; Mathematics and Communication including literacy and language development **at the end of Level V**; Two electives **at the end of Level V** and Report reflecting satisfactory participation in Enrichment Programme **at Level V**.

[Curriculum 2000: Rationale and Guidelines for Curriculum Reform p 35-36]

Jamaica goes even further in its revised assessment modes and has suggested the utilization of a range of assessment activities.

Observations and samples of work that do not depend solely on written exercises and tests. Assessment guide suggests that a letter, a list, a model, a performance, a debate, a portfolio entry etc be examples of assessment.

Students must practise the new skills that are being learned and get feedback to ensure that learning is progressing satisfactorily.

In addition there could be non-tangible products or processes such as dance, or an oral presentation such as a speech or a class debate. These need to be evaluated while the product is being created by

using rating scales, checklists, anecdotal records [or anecdotal notes] or behaviour tallies.

Consonant with the paradigms of constructivism, student centredness and the principle of flexibility, Jamaica implemented a differentiated form of assessment. Certificates will reflect the achievement of each student. The curriculum will be evaluated using Formative and Summative evaluation and diagnostic testing, incorporating where applicable, self, peer, teacher and parent evaluation. A variety of assessment strategies are recommended to facilitate the varied approaches. These are (1) Achievement Tests (2) Analytic Rating Scales (3) Anecdotes (4) Artistic Products (5) Check Lists for comprehension and study skills (6) Creative products (7) Compositions (8) Dramatization (9) Experimental narratives (10) Holistic marking (11) Homework (12) Informal reading (13) Inventory (14) Interviews (15) Journals (16) Learning logs (17) Oral presentations (18) Observation (19) Project work (20) Questionnaires (21) Role-play (22) Tracking sheets and (23) Writing portfolios.

In St. Lucia, like the other Caribbean territories with reformed Basic education, proposed various non-traditional assessment techniques to be used in the classroom. The extract below speaks about the assessment for the recommended Science syllabus which is also similar to all the other subjects viewed.

Paper and pencil tests cannot fully assess or measure achievement in an inquiry-centred science programme. These tests cannot measure the extent to which students can design investigations, make accurate observations, analyse data, make conclusions and communicate their findings to others. Measuring students' mastery of these skills requires alternative forms of assessment including, portfolios, oral presentations, performance tasks and practical work. A balance of traditional tests (Multiple choice, true and false, short answer items) and alternative assessment (portfolios, interviews, performance tasks and so on) will produce a more complete picture of students' achievement.

Assessment of students' work should be continuous and formative - provides students with feedback on the performance. Such assessment is central to the teaching/learning process, for it is essential for the diagnosis of strengths and weaknesses of individual students and provides teachers with an opportunity to provide suitable intervention strategies at the most appropriate time. Assessment records of a student must provide a comprehensive description of the student's attainment in the following areas: knowledge and understanding of concepts; levels of mastery of particular skills and the possession of certain attitudes. It should relate those attainments with the past performance of the student, to the achievement of other students and the objectives of the course.

Trinidad and Tobago has suggested a similar shift. The revised assessment suggests a more authentic approach using observation, written and oral work, hands-on activity or technology based presentations. The rationale for this reformed assessment is that as students become more involved in their own learning and assessment, the process is transformed into a learning tool.

Quality Assurance

Quality in education is a measurable concept of how good schooling is in nurturing young minds in learning knowledge and skills, shaping their values and behaviour that are necessary in contributing to the accomplishment of the national goals of social and economic

development [*Haiyan Hua, Harvard University, Graduate School of Education*]

Bahamas's Quality Assurance Unit was formed in February 2000, to carry forward the developmental work for the establishment of a quality assurance mechanism for the country.

The goals and objectives of the Unit are:

To assure the quality and recognition of educational programmes offered at all levels of public and private education and training institutions/providers operating or wishing to operate in The Bahamas;

The Division promotes the enhancement and maintenance of quality in the education system of The Bahamas through teacher training initiatives/incentives at the pre-service and in-service levels, ensure that quality exists in the programmes and credentials offered by education and training institutions / providers and to make certain that each educational institution is one of quality.

Barbados's National Accreditation and Certification Board [NACB] was created to deal with issues relating to accreditation, equivalency and articulation. It will be mandated to "require Barbados Community College [BCC] and other similar tertiary level institutions to meet with the Ministry of Education to allow for a framework for a smooth articulation from the BNDSE into its regular programming."

Barbados

In addition, special needs training will be available so that teachers can better cater to special needs students and effectively integrate them into mainstream schools wherever possible. Progress so far is (i) Curriculum technology integration (ii) teaching and learning standards (iii) creation of learning materials and notably (iv) development of an effective school inspectorate.

To ensure quality assurance in the reformed curriculum, Jamaica has embarked on a continuous monitoring of its implementation of the curriculum, student assessment, instructional technology, text books and supplementary materials, literacy intervention strategies and Professional Development during the In-Service and Pre-Service levels.

Some recommendations have been made with regard to addressing some of the weaknesses identified in the implementation of the curriculum. One recommendation which will have far-reaching and positive effect is the maintenance of efficient Curriculum Implementation Teams in schools to monitor and address instructional needs at the school level. The whole-scale adoption of this innovation can only support the effort to provide quality education for our children. [*MOEYC Core Curriculum Unit Report 2004-07-17*]

Quality Assurance component in Jamaica is divided into Curriculum implementation, Student Assessment, Instructional Technology Pilot, Text Book and Supplementary Materials, Literacy Intervention Strategies and Professional Development and Teacher Preparation at the In-Service and Pre-Service levels. [*Ministry of Education, Youth and Culture-Jamaica-PESP*]

In Trinidad and Tobago, a unit has been proposed to coordinate teacher training and ensure quality. This was indicated by the Honourable Minister of Education, Senator Hazel Manning, at the Teacher Education Symposium in August 2004. [*Teacher Education Symposium Report, Teacher Professional Development Project Unit, Ministry of Education, Aug 18-19, 2004. p. 14*]

3. Conclusion, perspectives and recommendations

All the selected territories have generally well designed reformed Basic Education Curricula in various forms of completion. The written curricula cannot be faulted for their compliance of the characteristics of a good curriculum

As indicated earlier in this report, **the focus is on Outcome-based and Integrated Learning models. An Outcome-based model implies that students will progress through specified outcomes at various rates with flexible scheduling. The practical implementation of this is/will be challenging for the teacher especially with ubiquitously large classes and associative large student-teacher ratios of approximately 40-45:1. An integrated approach model also provides for individualized interaction to a systematically structured curriculum. The implication of implementing these models is that there must be clearly articulated expectations and equally clear understanding by teachers of how these models are to be used.** The effect of a written curriculum can only be assessed by its successful implementation in the classroom. This means that for **successful implementation of the Outcome-based and Integrated Learning models** (i) it is imperative to create a consistent and a common set of procedures and standards for all students as they move from one instructional level to another. (ii) teachers **must** effectively implement its philosophy and learning outcomes and activities so that most if not all students achieve some form of success. The implementation of the reformed curricula should mean that individual strengths and talents are explored and exploited.

Teacher and principal professional development are therefore crucial. "Educational change involves *learning* how to do something new" says Fullan [1991, 289]. Given this, if there is any single factor crucial to **successful** change it is professional development. All the territories recognize the importance of a cadre of well trained teachers and principals to effectively give life to their restructured curricula in order to ensure increased individual student achievement and success regardless of student ability and varied intelligences. Fullan [1993, 46] notes that educational reforms are "hard to conceive and even harder to put into practice." As indicated earlier in the section on 'Challenges' teacher preparedness is taking place but not as rapidly as it should. Trained teachers are not implementing what they learned in their training to a satisfactory level and in a critical mass to make an obvious difference to learning. Training to assist students with learning needs is either not adequate or non existent.

Monitoring, guidance and accountability are fundamental to the new programmes of reform. Centralized Ministries of Education may find it difficult to accomplish this task because the Caribbean is in a constant cycle of training and losing their teachers to the more developed countries who can afford better conditions and remuneration for trained teachers. It is unavoidable that recruitment and retention of good effectively educated and trained teachers are crucial to the provision of quality education.

Therefore, the most urgent and fundamental need is continuous professional development to ensure an effective alignment of the written, taught and tested curricula across primary, lower and upper secondary schools. Additionally, it should be paramount to encourage experimentation of new and suitable assessment procedures to ensure these procedures are constructively aligned to the stated performance objectives, and teaching methods.

Strengthening the monitoring process to ensure compliance by practitioners of the implementation of the various activities required for developing concepts, for delivering the prescribed syllabus within the expected time frame, for taking account of students' experiences and the socio-cultural context in the delivery of the content is obligatory.

It is therefore important to train principals to become instructional leaders and to monitor the progress and implementation of the new revised curriculum. Administrators must also be trained to

take their responsibility to be effective leaders and administrators. Already, there is evidence that Barbados and Jamaica are moving towards this "new model of governance which places authority within the learning institution where the responsibility now lies." [Task Force Educational Reform Jamaica, 2004]

There is also a need for more classroom observation and monitoring of the teaching activities mainly but not solely for advice and development. Monitoring should be an inevitable process. In its absence, it will be difficult to authenticate the implementation procedures and achievement of sustained and sustainable outcomes. A useful activity is a development of a system of peer observation. This allows one's teaching peers to be able to observe each other and make helpful criticisms. By this activity teachers learn from each other. "Collegiality provides the best starting point in the process of teacher regeneration. 'Moving' or 'learning enriched' schools are what Fullan calls 'professional learning communities'. Teaching needs to be seen as a collective rather than an individual enterprise." [Quality Learning 2002]

A fundamental pitfall in educational change is what Newman [1998] notes is a fragmented or piecemeal approach. It is frequent that "attempts at fundamental reforms mutate into a series of incremental reforms." Piecemeal or fragmented approaches prohibit meaningful reform. There should therefore be the harmonization of curricula of the Training Colleges with the reformed core curricula so that graduates will be competent, confident and motivated to apply the suggested new learning, teaching and assessment methods required by the restructured curricula. As a motivating factor, it is essential, to lay out clearly initial qualification levels and requirements for upgrading and or maintaining certification for teachers.

Though difficult here should be clear links between teacher evaluation and teacher professional development. Therefore, wise counselling from teachers and principals whose experience and expertise on how to make the changes in the classrooms to achieve the outlined outcomes should be fundamental.

It is vital that an effective evaluation system be clearly outlined and communicated. This process can be facilitated if teachers are a part of the development of the criteria for evaluation. Evaluators must also be well trained not only in interpreting the evaluation measure but also in communicating constructive criticism and feedback in an appropriately timed, reasonably sound and charitable manner.

Research to determine the extent to which the written curricula are transformed into the taught and learned curricula should be a major monitoring, feedback and quality assurance activity.

It is obvious from the curricula documents that there are difficulties in creating curricula inclusive of the wide variety of learning styles, needs and abilities. This can no longer be avoided. There must be a clearly enunciated pathway for the education of students with learning needs and special students from the gifted to the mentally challenged, reflecting their diversified learning talents and disabilities and corresponding diversity of learning needs. **This can be done by inviting a group of persons who have specialized in these learning challenges to work on a comprehensive curricula and to give advice to the administration. Alternatively or in conjunction with, there should be strengthening of the schools which now cater for special learners.**

To support this system of curricula reform with its concomitant effective teacher development and monitoring requires a relatively large and sustained financial input and commitment. It is uncertain that Caribbean territories with their relatively small economies, buffeted by uncontrollable natural disasters, the caprice of energy prices and the vagaries of world trade, have at present the ability to pursue a sustained delivery of the curricula with its attendant training of untrained teachers, retraining of experienced ones and supply of the necessary supportive resources and infrastructure. It

is suspected that this has been a perpetual problem and threatens once again to be a problem in the development of education in the Caribbean in spite of the ambitious, well researched, well designed reformed and restructured written curricula. Unless this can be resolved, the Caribbean territories cannot effect equitable education and sustain the anticipated level of high standards and student success to which they aspire. Unless this can be resolved they therefore will not be able to achieve the "necessary transformation in Caribbean Society" and the "evolution of a new Caribbean person" as envisioned at the 1997 CARICOM Summit of Heads in Montego Bay, Jamaica.