Title:

**Continuous Curriculum Development: An Approach for Quality Curriculum Development
in the Caribbean**

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Abstract:

This is a case study of curriculum reform and development project in the Anglophone Caribbean. The paper reports on an ongoing project. Four phases of the curriculum reform process are identified and these are important for the institutionalizing of best practices. These are the curriculum assessment and evaluation, visioning, programme and course development and coordination. An important concern of the project was to create space for the Caribbean concerns to be heard and to deal meaningfully with approaches to the development of the ideal Caribbean person/worker. Some important practical approaches to the process of continuous curriculum development were highlighted, including time, data collection and ongoing quality assurance checks.

Introduction

The field of curriculum studies owes much debt to Ralph Tyler who in 1949 asked four questions about curriculum and they have had enormous influence on curriculum development in schools and colleges until today. Tyler's (1949) four basic questions are:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether theses purposes are being attained?

These four questions have traditionally been referred to as the Tyler rationale and have been extensively used in the development of curriculum. These questions and the implicit method were accepted and have had enormous appeal because they appear to be rational and reasonable. There is a sense in which peoples comfort level is secured when they know that the curriculum they are planning or delivering is composed of identifiable components (objectives, subject matter, methods, materials, and assessment /evaluation strategies).

Curriculum development should be an ongoing process in institutions of higher education. Indeed, continuous curriculum improvement ought to be a hallmark of higher educational institutions work. There are two definitions of curriculum, which will inform this discussion at this time. The definition offered by Doll (1996) and that proposed by Print (1987). Doll offers the following definition for curriculum " … the formal and informal content and process by which learners gain knowledge and understanding, develop skills, and alter attitudes, appreciations, and values under the auspices of" (p.15) the institution. This definition embraces what one learns and how one learns and highlights the centrality of the learner in the curriculum processes. The curriculum thus defined, especially the formal aspects which are planned and presumably observable, can be readily reviewed and evaluated and hence improved upon. Those informal aspects, for instance, strategies used by students to navigate the university terrain including negotiating bureaucratic organizational arrangements and their social relationships in the academic landscape create huge problems in terms of planning for them and addressing them within the confines of the curriculum. In fact, these issues can significantly undermine the influence and impact of the planned formal curriculum, because such processes can inflame emotions and the quality of interactions. This is immensely important in implementation.

Another definition that is important was offered by Print (1987): "Curriculum is defined as all the planned learning opportunities offered to learners by the educational institution and the experiences learners encounter when the curriculum is implemented" (1987, p. 4). It is abundantly clear that these definitions underscore the fact that 'curriculum' is not only what is written in the course outlines but also includes among others things, course design and development, selection of content, pedagogical choices in relation to teaching and assessment strategies, facilities, timetabling and access to information. The curriculum is also impacted by what is included and excluded. Hence, curriculum encompasses intention, delivery and outcomes. It is important to recognise that intention, delivery and outcomes are parts of the curriculum and hence in curriculum development due care should be given to all of these aspects of the curriculum.

Curriculum design and development is a dynamic process. The ongoing evaluation of a curriculum at institutions of higher education is extremely important. In many cases, when curricula are developed there are recommendations for curriculum reform. These recommendations sometimes are not adhered to. Further, depending on the educational bureaucracy at work in a particular educational institution, changes to curriculum might be cumbersome, requiring many processes and sometimes extending over a prolonged period. However, in order to improve the curriculum and to ensure its on-going relevance, evaluation mechanisms should be in place and should be followed. Each year, there needs to be a review of courses taught and decisions made about how they might be improved. Similarly, programmes should be reviewed after each cohort of students has graduated. In this way curriculum development becomes an ongoing process and ongoing curriculum improvement might become institutionalized into the higher educational landscape.

Problem Investigated and Objectives

Curriculum reform and development are important in higher education. However, these are sometimes problematic requiring long hours and oftentimes academics are involved in so many aspects of campus life that curriculum reform and redevelopment is not accorded the time it deserves in the firmament of higher education.

The purpose of this paper is to report on a curriculum reform project undertaken at an institution of higher education in the Anglophone Caribbean. The concept of Continuous Curriculum Development and the "Caribbeanization" of the process were touted and certainly, the activities that were involved hold out much for strengthening the process of curriculum development in higher education. Indeed, there is much merit in replicating these practices and institutionalising these approaches to curriculum reform and curriculum development/re-development in the Anglophone Caribbean. Accordingly, in this paper, a case study is presented of a curriculum reform project in progress at a Caribbean institution of higher education. This case study will provide information on how attempts were made at the "Caribbeanization" of the process and how continuous curriculum improvement was introduced. Further, it provides insights on how this approach might be utilized in other similar projects in the region.

Literature Review

The designing of a curriculum is understood to emanate from some kind of core philosophical or conceptual understanding and rationale. Curriculum development begins with curriculum design. It is useful to remember that design is an activity or process that people engage in that improves the quality of their subsequent creations. Rowland (1993, p. 80) defined design generically as "a disciplined inquiry engaged in for the purpose of creating some new thing of practical utility" and designing as "... requiring a balance of reason and intuition ... and an ability to reflect on actions taken."

In designing curricula, there is much benefit in using models or frameworks to deepen the focus of the curriculum and promote an 'intellectually rich' application of the conceptualizations. The issue of institutional support for curriculum reform and teaching and learning continues to be a concern in higher education (Chisholm, 2008). Schwab (1969) called attention to the commonplaces of the curriculum and these included the subject matter, students, learning environments/the milieu and teachers. From this framework, the learning milieus are those environments related to learning, deepening awareness, creating knowledge and sculpting lives.

In the literature on curriculum design, these elements of the curriculum are considered, albeit unevenly. This framework seeks answers to questions such as: what assumptions are held about learners - how they learn and what they need to learn? What expectations are made about the role of teacher? Who should have power over curriculum making?. There is a role for the investigation of contextual dimensions that inform curriculum processes including the wider social/community/political context of curriculum, the context brought by individual academics involved in 'delivering' the curriculum, and the context in which learners, indeed different types of learners, find themselves. The commonplaces offer one set of powerful analytic tools that can be used to gain a deeper understanding of what is taking place in the curriculum and should inform curriculum design and development.

Theoretical/Conceptual Framework

Four models are presented that underscore the thinking about curriculum and that provided theoretical and conceptual illumination for this curriculum development project. In these models, curriculum is understood in three ways, as intention, delivery and outcome. These models include the generic ADDIE model, the Continuous Curriculum Development model (Wolf 2007), the Integrated Course Design Model (Fink 2007) and the Backward Design model (Wiggins and McTighe's 1998, 2005).

Instructional design is an important aspect of curriculum work and many models of instructional design have been developed. In some way or shape they incorporate the Tyler rationale. There is one model that seems to have great dominance in the field, the ADDIE model. This model is a generic one that is systematic and logical. It provides a systematic approach to course development efforts and it is a basic model that has tremendous versatility in relation to its usage for face-to-face and online modalities of teaching and learning. There is no doubt that it provides instructional designers with a framework that will enable them to ensure that their instructional products are effective and that their creative processes are as efficient as they can possibly be.

**ADDIE** stands for the steps of the model:

- *Analyze*: define the needs and constraints
- *Design*: specify learning activities, assessment and choose methods and media
- *Develop*: begin production, formative evaluation, and revise
- *Implement*: put the plan into action
- *Evaluate*: evaluate the plan from all levels for next implementation

In this approach to instructional design, each step has an outcome that will inform the next step in the process. It is imperative that evaluation occurs after each step. There is a clear understanding by the nature of the process of ongoing analysis that learning-centredness is a hallmark of the ADDIE model of instructional design.

The model begins with the analysis phase or the first phase (represented diagrammatically below) and this is extremely crucial in the course design and development activity. This is the phase where the scope of the content is determined in relation to the needs and the constraints of the learning environment and the available resources. A number of questions will need to be

answered in this phase of the course design and development activity relating to the learners and their learning needs.

The ADDIE Instructional Design Model
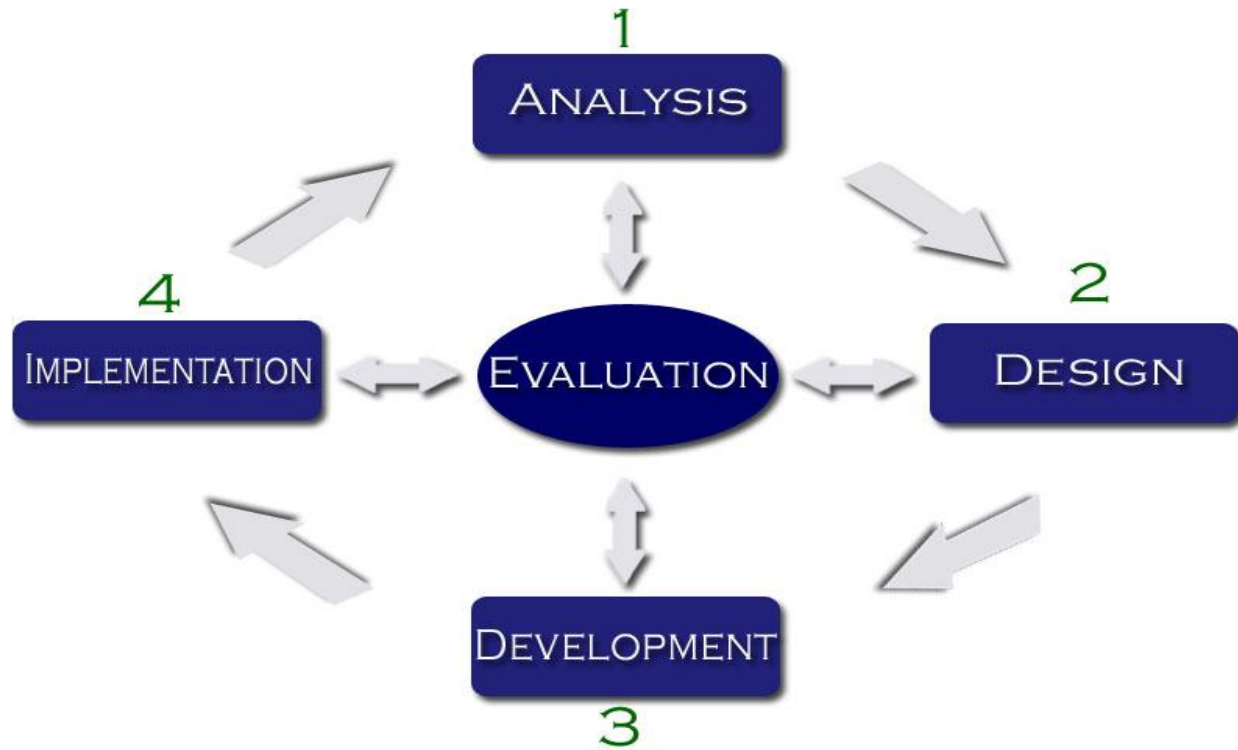
ADDIE Model

In phase two or the design phase, the concerns are related to the learning objectives or the learning outcomes. Of course, the various skills, knowledge and attitudes to be developed must inform the decision making in this phase. Once again the resources and strategies are important in the design process and such decisions will be important. There will be also need to delineate and structure content at this stage and of course, assessment processes and activities. For online approaches, the storyboarding off the entire process is recommended. The third phase is the development phase. This phase is concerned with the preparation of the materials to be used in teaching and learning sessions. Since the model's orientation is online learning, the development of various media would be important at this phase. In the fourth phase implementation of the curriculum/course occurs. Of course, there can be a dry run with in house testing of the product by a select group of actual users and these might be former students or workers, a kind of pilot testing or alpha testing. This will lead to beta-testing or the first real actual run with the actual students. In both phases, t eh feedback from these students will be absolutely important and these should be collected systematically, reviewed and used to improve the curriculum/course.

Ongoing evaluation is important and therefore the quality management component of the programme must be given sufficient attention. But in the fifth phase of the model, evaluation has an important contribution to make. The instructional effectiveness of the entire process must be determined. So, the content, strategies, assessment and all the activities of the curriculum/course should be evaluated in this phase. Formative evaluation developed for the course would already unearth some of the concerns about using the curriculum/course. However, there is this final phase which is summative evaluation of the curriculum/course. The Continuous Curriculum Development Model was the major theoretical and Conceptual framework used.

Wolf's model of Continuous Curriculum Development (Wolf, 2007) was very important. For wolf, curriculum development must be faculty led and data driven. This approach calls for the systematic assessment of the curriculum and in turn, the outcomes of the assessment should be used to make improvements to the curriculum. Other insights were gleaned from Fink (2007), the Integrated Curriculum Model and Wiggins and McTighe (2005) the Backward Design model. There was an interest in using elements of these models to ensure that the contextual needs of the curriculum were met effectively and efficiently.

Fink's (2007) Integrated Course Design Model was also important. In this model, the familiar triad of learning goals, teaching and learning activities and feedback/assessment are privileged. Drawing from Fink's model, the following components of the curriculum are to be fully understood and find meaningful expression in the design and development phase:
1. Learning goals are concerned with the knowledge, skills and attitudes that students will learn
2. Learning activities are concerned with the strategies that will be employed to get students to learn, and
3. The feedback/assessment is concerned with the activities that will be used to determine if learning has indeed being realised.

Fink underscored the importance of "situational factors" in this framework such as course context, the nature of the content to be learned, the students, the teachers and overall professional expectations. He offered his own taxonomy of significant learning that identified six kinds of learning that must be considered when a course is being designed. These six kinds of learning are 1) Foundational Knowledge; 2) Application; 3) Integration; 4) Human Dimension; 5) Caring; and 6) Learning How to Learn. His taxonomy unlike Blooms is interactive and not hierarchical.

INTERACTIVE NATURE OF SIGNIFICANT LEARNING
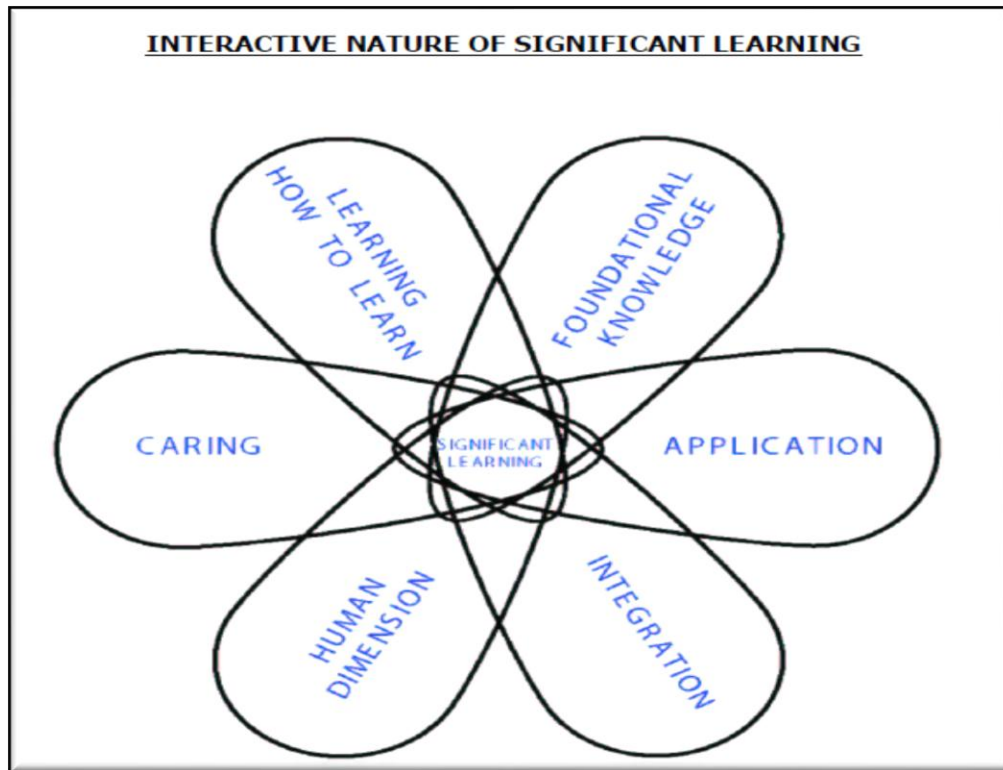
From "A Self-Directed Guide to Designing Courses for Significant Learning" L. Dee Fink, PhD.
http://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf

Another approach to curriculum design that was important in this curriculum development was the so-called "backward design" (Wiggins and McTighe's 1998, 2005). The stages in the backward design process are:

1. Identify desired results
2. Determine acceptable evidence
3. Plan learning experiences and instruction

In stage one, developing the curriculum, the first thing to do is to determine what students should know, understand, and be able to do. It is necessary to consider three levels of knowledge: that which is worth being familiar with, that which is important to know and do, and that which represents an "enduring" understanding. Four criteria are offered for determining essential understandings:

1. To what extent does the idea, topic, or process represent a "big idea" having enduring value beyond the classroom?
2. To what extent does the idea, topic, or process, resides at the heart of the discipline?

3. To what extent does the idea, topic, or process, requires it to be uncovered?
4. To what extent does the idea, topic, or process offer potential for engaging students? (Wiggins & McTighe, 1998, 10-11)

The second stage of the model requires that a determination be made regarding the means by which educators will know if students have achieved the desired understandings and skills. It is therefore important to decide on the assessment strategies to be utilized. It is recommended that due consideration should be given to making use of multiple approaches - from methods such as informal checks to more complex performance tasks and projects. Assessment is therefore foregrounded in this approach since there is a strong tendency to think about assessment toward the end of course. This approach calls for assessment to be considered at the very beginning. In this regard this approach repositions assessment.

In the third stage, learning experiences (instructional strategies) are considered. Drawing from the concept of alignment (Biggs) (2003), the learning experiences are designed to enable students to produce the desired results. Wiggins and McTighe (1998) suggest asking the following questions during this stage:

1. What enabling knowledge and skills will students need to perform effectively and achieve desired results?
2. What activities will equip students with the needed knowledge and skills?
3. What will need to be taught and coached, and how should it best be taught, in light of performance goals?
4. What materials and resources are best suited to accomplish these goals?
5. Is the overall design effective? (Wiggins & McTighe, 1998, p.13)

Curriculum implementation is oftentimes experienced as problematic. This is particularly so when the curriculum is not owned by the faculty. Hence, the traditional approaches to curriculum implementation, the fidelity approach, the mutual adaptation approach, and the curriculum enactment approach informed the thinking in opting to use the Continuous Curriculum Development Model (Wolf, 2007) as the major theoretical and conceptual framework. This enabled faculty to take ownership of the process of curriculum reform and development from the outset and hence, issues of implementation should not suffer from lack of ownership or lack of commitment to the new curriculum.

Research Methodology, Findings, Interpretation and Analysis: Curriculum Evaluation and Development

Overview

The research methodology for this project was the case study approach. A single holistic case study was done. As in many case study data collection and some analysis occurred together. The research methodology called for the development of an assessment strategy since this was a curriculum evaluation and curriculum reform project. The project called for the use of multiple methods of data gathering methods. Accordingly, the major data collection approaches were (a) consultation through town hall meetings and focus group discussions with all the major stakeholders including representatives of the private sector, employers, parents, students, teachers, administrators, and government officials; (b) review and analysis of relevant documents, such as programme and course documents, government reports, UG information documents, educational papers and policy papers, teaching materials; (c) observation of teachers and students in relevant learning settings; (d) archived surveys of relevant parties; and (e) review of available literature related to the issues that were germane to the curriculum and f questionnaires. Transcription of the data was done for the focus groups and meaningful notes were taken for the interviews. The data were analysed using traditional qualitative methods for qualitative data including, deep reading of notes, identifying of categories and themes. For the quantitative data, descriptive statistics were used to make sense of the data. However, the project lent itself to ongoing evaluation and interpretation of the findings. Four major stages of the curriculum review and development activities were engaged and the fifth stage will be implementation which cannot be reported in this paper since it has not yet occurred.

Stage One: Curriculum Assessment and Evaluation

At a Caribbean University, continuous curriculum development was initiated by engaging in engaging in curriculum assessment and evaluation (STAGE ONE). In fact, this phase was called the needs assessment and situational analysis but this was essentially an assessment and evaluation of the various programmes. This was an investigation of the contextual factors that were likely to impact the curriculum. These factors were likely to be political, social, economic, or institutional. Situational analysis complements the information gathered during needs assessment. It is sometimes considered as a dimension of needs assessment. Continuous curriculum development calls for this type of evaluation and it is best facilitated by investigating the outcomes associated with the various programmes offered in the university or department or faculty. This is equivalent to the analysis phase in the ADDIE model. Since this was a curriculum reform project, the needs assessment and situational analysis was undertaken to provide contextual data that would inform revising of the curriculum. In the first act of assessing and evaluating the curriculum, a SWOT analysis was done to ascertain the strengths, weaknesses, opportunities and threats that might have been present with respect to the existing curriculum. This was done by the faculty and students. Two approaches were used namely a focus group discussion and rating scales.

The second phase of the assessment strategy was developed based on Kirkpatrick's (1998) four levels of the evaluation process. However, Kirkpatrick's approach only provided guidance and

was not adhered to in a slavish way. The four levels of the process consist of the following:

Step 1: **Reaction** - How well did the learners like the learning process?
Step 2: **Learning** - What did they learn? (the extent to which the learners gain knowledge and skills)
Step 3: **Behaviour** - (What changes in job performance resulted from the learning process? (capability to perform the newly learned skills while on the job)
Step 4: **Results** - What are the tangible results of the learning process in terms of reduced cost, improved quality, increased production, efficiency, etc.?

Kirkpatrick four levels of evaluation enabled the inputs to be chosen pretty easily. Data were gathered from relevant stakeholders such as alumni, graduating students, entering students, and employers/industry players. The work was initiated by the faculty who had established a curriculum reform committee. For this project town hall style meetings were held and specific focus group data gathering session with prearranged questions and opportunities for conversational interviewing. The information gathered was recorded. In this phase, there was evidence and various matrices were used. Previous reviews, programme objectives were analysed and checklists are used to determine if they were actually realised. Interviews with students and faculty also provided additional data. Examinations outcomes and work samples all assisted in providing data about how the curriculum was delivered and the outcomes of the curriculum implementation. There was also the gathering of information on the actual teaching and learning situation from students and teachers. Work done was examined and facilities were also inspected.

Stage Two: Curriculum Visioning

The next phase of the project was curriculum visioning and this was STAGE TWO. This incorporated focus groups discussions and brainstorming sessions to ascertain the attributes of the graduates to be developed and the various qualities that should be seen in these graduates. This phase of the process included visioning in relation to overall programmes and in this regard special attention was paid to the graduate attributes as each programme was evaluated and restructuring recommended. In fact, each programme developed actual indicators of programme outcomes. The indicators were descriptors of what students must do to be considered competent in an attribute; the measurable and pre-determined standards.

The use of the Caribbean Community Secretariat's approved Regional Qualification Framework (RQF) and the Regional Vocational Qualification Framework (RVQF) as reference points for establishing entry requirements and academic and occupational competencies, when developing the concept of the ideal graduate provided opportunities for the contextual realities of the Caribbean to be included. This of course, was in addition to using international tertiary level bench marks and accreditation standards. Relating the curricula to the Caribbean Community qualification and certification protocol was important for qualified Caribbean nationals who might want to travel freely in the region to obtain employment. When visioning, the concept of the "Ideal Caribbean Citizen as developed by CARICOM was utilized to strengthen the Caribbean focus of the programmes.

A major concern of this phase was to ensure that the curriculum was developed to provide learning opportunities for the students to embrace the importance of the sustaining of the Caribbean environment. Hence, environmental sustainability in the Caribbean was treated in the programmes so that graduates would be environmentally conscious. In fact, a major goal was to develop programmes in order to graduate students who would be committed to sustainability. Each programme delineated the structure, contents the various components, including the courses based on the year of study.

Stage Three: Programme and Course Development

Armed with the above information, it was now possible to engage in programme and course development. Programme development as a part of the curriculum design process is essentially a creative endeavour which seeks to meet the needs of specific target groups. It is a process of conceptualisation, projection and clarification. Course development is also a design activity that looks at the specific content to be studied in the course and arrange them in ways that will enable teaching and learning to occur in short segments, usually for a period of 39 contact hours per semester. In both programme design and course design, rationale, learning objectives, programme/course content and pedagogies were important. Each programme required the development of a set of indicators that would express the attributes of the ideal graduate of the programme.

For course development, Fink (2007), Wiggins and McTighe (2005) and the generic ADDIE approach were useful. In this the programme and course development phase (STAGE THREE), the programme goals and objectives were crafted, examined and re-examined to ensure they reflected the attributes of the ideal graduate. The courses were written with a clear understanding that care should be taken to ensure that they were designed to foster the identified programme objectives and as much as possible be relevant to Caribbean realities especially in relation to indigenous communities and indigenization in general. In relation to subject matter content, these were appropriately balanced among historical and contemporary texts, national, regional, and international authors and concepts/ theories. Basically, the content, the methods of teaching selected, learning activities engaged and assessment strategies utilized were all chosen to assist in the achievement of the course objectives and the programme goals and objectives. These were checked and rechecked to determine the major content and skills development areas that were being addressed and an identification of programme objectives that were currently being fostered effectively and which were not.

The approaches to teaching and learning were driven by the need for the curriculum to be student-centred, constructivist, experiential and promote critical, creative, and innovative thinking. Instruction would also be technology driven, and integrate face-to-face and e- learning (blended learning) methods. Assessment would be multi-dimensional and emphasis would be placed on the performance of understanding.

Stage Four: Curriculum Coordination

The next phase of the process (STAGE FOUR), the Coordination phase took into account curriculum assessment, the level of effort expected by students and the level of sophistication required at each level. Hence, curriculum mapping became a major practical activity of this stage. Curriculum mapping was one of the checks and balances introduced in this phase to ensure

that a quality curriculum was produced. It is a way to document and share curricula across programmes and examine the whole from gaps, overlaps and redundancies. This approach provides a way of finding out where and how knowledge and skills are developed and enables programmes to assess how well programming and processing are aligned to intended learning outcomes. This created an opportunity to determine if the objectives were carefully selected, was the content properly related and would the pedagogies or teaching learning strategies recommended lead to the realization of the objectives.

Alignment of courses and course objectives, teaching methods and assessment activities were considered extremely important in higher education (Biggs, 2002; Wolff, 2007). Accordingly, the developing courses were revisited and re-examined with specific concerns about alignment as follows:

a. Align programme and course objectives
b. Align foundational knowledge and course content
c. Align course teaching and learning activities
d. Align assessment

The next PHASE of the project will be the implementation of the revised curriculum. Of course, the piloting of new courses will be done to and this will be followed be followed by revisions for full implementation later.

Conclusion

Curriculum development can certainly be engaged as an ongoing process but it requires enormous planning and a commitment to best practices. In this project, it was clear that there was an interest in product, process and praxis. With respect to outcomes-based curriculum development, it was engaged as a process of the continuous improvement of sustainable practices. A scholarly approach to curriculum development guided the process and this is important. The processes engaged were faculty-driven, data-informed and literature-supported. The process is further supported by a scholarly approach to analysis, application, teaching and assessment. Of importance, was the opportunity to utilize the Caribbean Community Secretariat's approved Regional Qualification Framework (RQF) and the Regional Vocational Qualification Framework (RVQF) as reference points for establishing entry requirements and academic and occupational competencies. In this way there were concrete steps taken to develop the ideal Caribbean citizen.

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