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 reflection on the development of a curriculum reform project in the Anglophone Caribbean. The paper reports on an ongoing project. Four phases of the curriculum reform process were identified which were considered important for the institutionalizing of best practices. These were the curriculum assessment and evaluation, visioning, programme and course development and coordination. An important aspect of the project was to create space for Caribbean concerns to be engaged, to develop the autonomous learner 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.

Keywords: Continuous curriculum development, Caribbeanization, autonomous learner

Introduction

Curriculum design and development should be an ongoing process in institutions of higher education. In many cases, when curricula are developed there are recommendations for curriculum reform to take place at a later date. Some-

times these recommendations are not heeded. 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. Academics, who would be expected to be involved in curriculum development are often engaged in so many activities on campus that curriculum reform and redevelopment is not accorded the time it deserves. In order to improve the curriculum and to ensure its on-going relevance, evaluation mechanisms should be in place in every curriculum and should be followed rigorously on an annual basis. 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 will become institutionalized with every succeeding cohort of students. It cannot be overemphasized that curriculum reform and development is important in higher education.

The concept of continuous curriculum development and the "Caribbeanization" of the process were part of the framework of a curriculum reform project that is being reported on in this paper. Many of the procedures and activities that were done might readily find resonance with many institutions of higher education in the Caribbean. In fact, they hold out much hope for strengthening the process of curriculum development in higher education. Accordingly, there is much merit in communicating these practices and making a case for the institutionalising of these approaches for ongoing curriculum reform and curriculum development/re-development in the Anglophone Caribbean

Problem Investigated and Objectives

The purpose of this paper is to report on a curriculum reform project undertaken at an institution of higher education in the Anglophone Caribbean. In this institution, the curriculum which was lopsided, dated, and utilized traditional minimalist approaches of listing content without significant attention being paid to the other elements of the curriculum. The philosophical orientation, although unstated, could be inferred as knowledge was "out there" and it was to be embraced as given. The curriculum documents were presented in such

ways that the dominant concerns seemed to have been disciplinary and hence, subject matter content was the overriding priory in delivering the curriculum. This curriculum was largely concerned with knowledge transfer. A major challenge was how to reconceptualize the curriculum along broader theoretical lines, yet having greater levels of practical relevance, making it more learner-centric and with an orientation to support the development of the Caribbean. In this way, the curriculum would provide a basis for the development of the Caribbean thinker, worker, citizen, and the autonomous Caribbean learner. Accordingly, this paper is being presented as a case study of a large curriculum reform project in progress at a Caribbean institution of higher education.

This case study will provide information on how the problem of the lopsided curriculum with an orientation to subject matter content without rootedness in major Caribbean realities and ways of life was engaged. Further, other objectives include the communication of the attempts that were made at the "Caribbeanization" of the process and how continuous curriculum improvement was introduced. It also presents information on how this approach might be utilized in other similar projects in the region.

Literature Review

In this review of the related literature, curriculum design is underscored as a creative process. The benefits of using frameworks is engaged. The commonplace of the curriculum (Schwab 1969) as a major way of understanding the curriculum and in fact, as a framework, is identified. Various models of curriculum design are discussed from the literature, including the ADDIE, model, the Continuous Curriculum Development model (Wolf 2007), the Integrated Course Design Model (Fink 2007a) and the Backward Design model (Wiggins and McTighe 1998; 2005).

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 that people engage in that improves the quality of their subsequent creations. Rowland (1993) 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" (p. 80).

In designing curricula, the use of models or frameworks helps to enliven the curriculum and promote an 'intellectually rich' application of the conceptualizations. Imaginative and practical oriented curricula that are designed to actively engage students in process-based learning enable students to develop skills and competencies that can position them as independent and autonomous learners. In designing curricula, institutional support and stakeholder buy-in are extremely important (Chisholm 2008). In fact, when there is institutional support for curriculum reform and curriculum development, there is likely to be greater buy-in and ownership. The development of curricula to promote 'intellectually rich', yet practical and meaningful applications has been seen in multiple sites of higher education, for instance, through the progressive developments in curriculum in the activities of the UK Higher Education Academy's (2007), Imaginative Curriculum Project. This initiative drew together "a network of practitioners who believed that designing a curriculum was a creative process in which knowledge, skill, imagination and passion for a subject come together." The presence of these qualities enabled the thorough-going success of the curriculum design project since ownership and buy-in were realized.

Theoretical/conceptual framework

Schwab (1969) called attention to the commonplaces of the curriculum; 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. This framework sought answers to questions such as: what assumptions are held about learners – how do they learn and what do 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. There is also the context brought by individual academics involved in delivering the curriculum, as well as the context in which learners, indeed different types of learners, find themselves. The

commonplaces offer one set of powerful analytic and yet directional tools that should inform curriculum design and development.

Four models are presented that underscore the thinking about curriculum, and these 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 ADDIE model, the Continuous Curriculum Development model (Wolf 2007), the Integrated Course Design Model (Fink 2007a), and the Backward Design model (Wiggins and McTighe 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. However, there is one model that seems to have great dominance in the field: the ADDIE model (see figure 1).

The ADDIE Model

This model was first developed in 1975 by the Center for Educational Technology at Florida State University. Originally, it was used by the US army in training programmes for soldiers. This model is one that is systematic and logical. It provides a systematic approach to course development efforts and is a basic model that has tremendous versatility in relation to its usage in 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, since evaluation is a big part of the ongoing process of development. Therefore, the quality management/quality assurance component of the programme must be given sufficient attention.

ADDIE stands for the steps of the model:

- **A**nalyze: define the needs and constraints
- **D**esign: specify learning activities, assessment and choose methods and media
- **D**evelop: begin production, formative evaluation, and revise
- **I**mplement: put the plan into action
- **E**valuate: evaluate the plan from all levels for next implementation

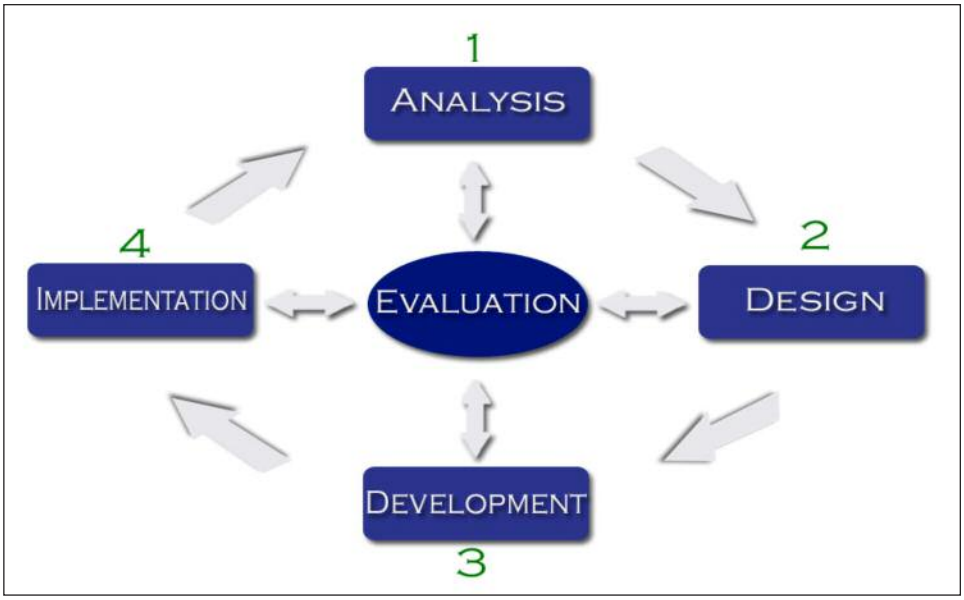

Figure 1: The ADDIE Instructional Design Model

The Continuous Curriculum Development Model

The Continuous Curriculum Development Model was the major theoretical and conceptual framework used. Wolf's (2007) model (Continuous Curriculum Development) was very influential. 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. In this approach, three major stages of the curriculum development process must be engaged.

In Stage One, curriculum visioning is the important process. The designing of a complete programme must commence with statements of the outcomes of the process (Curriculum visioning). In this phase, reflection on the existing curriculum is recommended and this would be done to delineate weaknesses or important gaps. Then much brainstorming is done to develop the vision that the curriculum developers would love to see become reality. Further, there is the call for the examination of curricula from major universities worldwide to inform the thinking of the reviewers and to assist in visioning. This process should lead to Stage Two.

In Stage Two there ought to be the writing of the actual courses. This will invariably lead to Stage Three or the stage that calls for the reviewers to ensure the alignment of the curriculum.

Stage Four focuses on coordination and additional development (where necessary) of the programmes and courses. The notion of continuous curriculum development was always affirmed and this should be continually addressed. As the process proceeds, additional recommendations for quality assurance and continuous improvements are engaged.

In Stage Five the curriculum is implemented and the vision of the graduate developed in Stage One is now a major concern in this, the implementation phase. This vision is used to engage in ongoing curriculum assessment and evaluation so that the process of continuous curriculum development and improvement is realized.

The Integrated Course Design Model

Fink's (2007a) Integrated Course Design Model is also important. In this model, the familiar triad of learning goals, teaching and learning activities, and feedback/assessment are privileged. From this perspective, the following components of the curriculum are to be fully understood and find meaningful expression in the design and development phase.

1. **Learning goals:** the knowledge, skills and attitudes that students will learn
2. **Learning activities:** the strategies that will be employed to get students to learn, and
3. **The feedback/assessment:** the activities that will be used to determine if learning has indeed been realized.

These important elements of the curriculum – learning goals, learning activities and feedback/assessment – should be guided by the important concern of the kind of impact that this course will have on students. The learning goals must be crafted in such a way that they lead to learning activities which will enable significant learning to take place. This will be demonstrated as various outcomes are realized; assessment activities will measure the learning outcomes. In this regard, there must be an integrated approach to achieve "significant

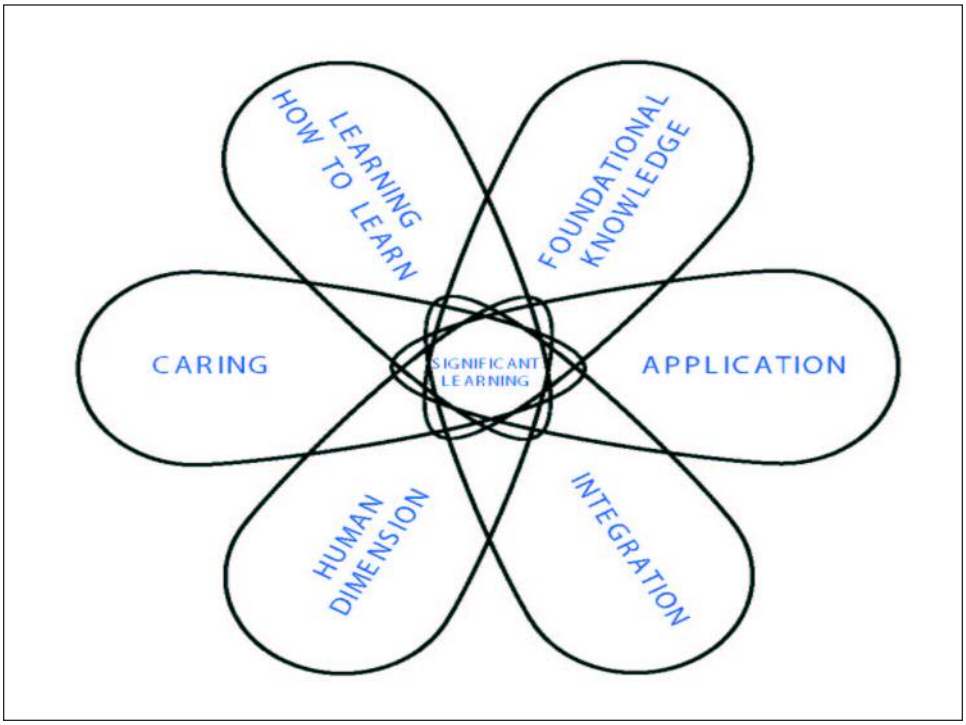

Figure 2: Interactive Nature of Significant Learning
From "A self-directed guide to designing courses for significant learning", L. Dee Fink, PhD. http://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf

learning" (Fink 2007b). The crafting of the learning goals and learning activities will incorporate the areas identified by Fink in his diagrammatic representation of significant learning (see figure 2).

The Backward Design Model

Another approach to curriculum design that was important in this curriculum development was the so-called "backward design" (Wiggins and McTighe 1998; 2005). In this approach, there are three clear stages that should be followed in the design of the curriculum. The stages in the backward design process are

1. Identifying desired results
2. Determining acceptable evidence
3. Planning learning experiences and instruction.

Caribbeanization and Learner Autonomy

The Caribbean islands were once colonial societies, and vestiges of colonial times and their heritage linger. For its part, the Anglophone Caribbean has emerged out of slavery, with the peasantry and rural villages. The African and Asian heritages of these societies have influenced them to value community and communal ways of existence. Hence, in these Caribbean societies, community, communalism, and communal existence are important ways of self-understanding and existence. Accordingly, in these societies, community, humanity, and morality are seen as values that are of absolute importance in the pursuit of a meaningful and fulfilling life (Smith 1984, 1991).

In the burgeoning knowledge society there is a continuous need for learning. In fact, society is now being described as a 'learning society' reflecting the increased need for learning (Edwards and Usher 2001; Wain 2000). The movement to the learning society in many developed and developing societies (including the Caribbean) comes with some problematic concerns. Much of the discourse about this learning society is framed within the context of neoliberal philosophy which is one system of thought that undergirds the free market system. Neoliberal perspectives privilege individualism, which is problematic in light of the traditional orientation of Caribbean societies to communal expressions.

For Miller (2009), there are some defining features of the social context called the Caribbean. He identified six contradictions that he offered as important features of Caribbean societies: These characteristics are

- immigrant mainstreams
- dominant minorities and marginal majorities
- modern societies of modest means
- cultural cradle on the economic periphery
- common history, identity and destiny punctuated with insularity
- the creative folk and the conforming intelligentsia.

Miller's six contradictions or characteristics constitute some of the most salient defining societal features of the Caribbean. From this perspective, the Caribbean experience is punctuated by various contradictions and existence is

exemplified by a sense of being uprooted, some amount of marginality, modest economic existence, and creativity. There is formal, informal, and non-formal communal living. Smith (1991) also noted that Caribbean people were uprooted, indeed potted plants. This understanding underscored the transported nature of the Caribbean person: the immigrant, and the forced migrant, and this is true certainly of the African majority. This historical perspective points to some elements of an unresolved separation, especially when viewed from the scenario where domination and subjugation were realities. These aspects of Caribbean life have contributed to the problems of identity that many Caribbean people seem to have. The issues of freedom/liberation, power and powerlessness, superiority and inferiority loom large and are played out in the educational landscape.

Caribbean persons have been freed from slavery and indentureship, but there are still elements of bondage that dominate many lives. This bondage is certainly not physical, but mental and otherwise (Smith 1984, 1991). It is therefore important that curriculum development in the Caribbean seek to focus on the development of the emancipatory aspect of life; this might be achieved through Caribbean emancipatory pedagogy (CEP). This is one way of "Caribbeanizing" the process. In pursuing CEP, this must be understood as an approach to teaching and learning that is rooted in dynamic central concepts of Caribbean life, and must use pedagogies that help in offering identity clarification, Caribbean rootedness, and personal liberation.

The need for emancipatory pedagogy and for resisting hegemony arise because Caribbean education systems have promoted conformity to the status quo, engaged in exclusionary educational practices, and perpetuated notions of superiority and inferiority. Domination and subordination have also been observed as overt and subtle as well as covert and deliberate (Chisholm 2008, 2009; Hickling-Hudson 2004; Miller 2009; Smith, 1991). In some of these Caribbean educational sites, these relationships were expressed in processes of cultural and intellectual violence that undermined the dignity of persons and inveighed against their culture (Alfred 2010; Hickling-Hudson 2004). Such perceptions about superiority and power were internalized and were later manifested in oppressive, elitist, even racist behaviours.

Many educational institutions in the Caribbean (in the past and present)

alienated and disempowered students through the use of culturally oppressive curriculum processes and practices. Much of our educational activity then and now elevated white cultural norms and forms as the dominant and the preeminent way of human expression. Several who were privileged to access secondary and postsecondary education were indoctrinated with ideologies of power, superiority and subordination that were to be used in the service of the status quo. However, some of the educated elites have resisted the educational project aimed at conformity to the status quo. Many of these persons have been involved in the search for counter-hegemonic pedagogies.

Resistance to hegemony is demonstrated in various ways. It can be detected in multiple forms, for instance in nonconformance, passivity, activity, knowledge, and meaning (Kaufman 2000). The development of Caribbean identity and learner autonomy can be embraced as meaningful efforts to educate for thoroughgoing resistance to hegemony. Accordingly, in developing a curriculum with an emphasis on Caribbean realities and way of life, it is important to note these realities of life in the Caribbean, including the contradictions, and introduce mechanisms to deal with them in terms of defining who Caribbean people are and how we might resolve some of these contradictions. The definition of the ideal graduate and especially the attributes of the ideal Caribbean citizen found exposure in this project. Further, the Caribbean Community (Caricom) Secretariat's approved Regional Qualification Framework (RQF) and the Regional Vocational Qualification Framework (RVQF) were used in developing programmes, and especially in relation to entry requirements, and proficiencies/competencies to be developed.

Learner autonomy

Autonomy is usually understood to be the capacity to take charge of, or responsibility for, one's own learning. The idea of taking charge of one's learning has sometimes been seen as devolving from teachers who give students the set of cognitive, metacognitive, and affective skills or techniques that they can use to learn in meaningful and successful ways (Holec 1981 as cited in Benson 1997). Hence, the student would develop skills and the facility to determine some of the learning objectives, the content, monitoring learning, and even self-assess-

ment and evaluation. Another understanding of learner autonomy is seen in relation to the development of the internal capacity of the learner for independence and self-authorship. This facility for detachment, critical reflection, decision making, and independent action in pursuit of learning (Little 1991 as cited in Benson 2001) is certainly in keeping with the objectives of this project.

Learner autonomy might be well served through curriculum development processes that are invested with the vision of developing the kind of learner that will be given to taking responsibility for learning and personal authorship. This might be accomplished through an outcomes-driven curriculum especially where the outcomes of learning are developed to achieve the kind of learner who is a critical thinker and committed to lifelong learning. There is much hope in an emerging Caribbean approach to continuous curriculum development that foregrounds learner autonomy. Teachers are responsible for taking the initiative to stimulate autonomous learning in their classes, but in effect they should develop partnerships in learning. This must commence from the course design and development phase of the curriculum project. It is from this point that decisions about teaching and learning must be informed by concerns about the quality of the output or outcome of the educational process, and how the autonomous learner might truly be developed. The importance of the common places of the curriculum (Schwab 1969), learning goals (Fink 2007) and the overall vision of the curriculum (Wolf 2007) must be clear. It is important to start with the end in mind or embrace aspects of backward design (Wiggins and McTighe 1998, 2005).

Method

Stage One: Curriculum assessment and evaluation

The research methodology for this project was the case study approach. In a curriculum development or curriculum reform project, a needs assessment and situational analysis require the collection of rich data that will inform the process. A modified version of the Wolf (2007) model of continuous curriculum development was adopted. In this project, continuous curriculum development was initiated by engaging in the curriculum assessment and evaluation of the

various programmes (Stage One). A single holistic case study was done. As in many case studies, data collection and some analysis occurred together. There was a needs assessment and the investigation of the contextual factors that were likely to impact the curriculum. The situational analysis complemented the information gathered during needs assessment.

In these curriculum development/redevelopment projects, the needs are usually revealed through meetings with students, faculty, departmental leaders, administrative leaders, meetings with stakeholders, interviews, content analysis of documents/documentary review, surveys and analysis. In terms of the multiple stakeholders associated with an institution of higher education, the following are usually included

- policy makers in government
- educational and other government officials
- employers
- the business community/private sector
- politicians
- parents
- alumni
- professional groups
- sector interests groups (e.g. mining, agriculture, forestry, manufacturing)
- NGOs.

The first act of assessing and evaluating the curriculum was a SWOT analysis. This was done to ascertain the **strengths, weaknesses, opportunities,** and **threats** that might have been present with respect to the existing curriculum. It was done by collecting data from the faculty and students. Data collection strategies used included focus group discussions; meetings with students, faculty, departmental leaders, administrative leaders; town hall meetings with stakeholders; focus groups discussions/interviews with stakeholders; and other interviews with members of the communities served by the institution. There was also the use of rating scales to determine the quality of the various components of the curriculum. Content analysis/documentary review and analysis of previous reports of the institutions academic endeavours were also undertaken. Workshops and seminars were also held to develop concepts of the ideal

Caribbean student, learner autonomy, and the pedagogical strategies that would promote greater levels of personal responsibility for learning and professional development.

Data were gathered through conversational interviews (Patton 2002). Focus group meetings with campus stakeholders were held to determine the contextual realities. These focus group meetings provided opportunities for informal conversational interviews and questions were raised about the nature and content of the existing curriculum, the academic programmes, courses, student enrolment, areas of emphases, the needs of the faculties, the needs of the students, and the needs of the other stakeholders. These meetings also provided opportunities to interface with faculty, outline and further negotiate the approach to the curriculum reform, and determine readiness for the project. Various documents were available that provided information on the existing curriculum, and these were collected and reviewed. Accordingly, content analysis of the following documents was achieved:

- academic programme documents
- student handbooks
- course outlines
- specialist reports
- reports on the environmental concerns
- government policy reports with relevance to higher education.

Data were also gathered by interviewing key stakeholders and holding town hall meetings with students and members of the wider community. In these meetings, the curriculum reform specialists determined through questioning, the objectives, content, delivery approaches, assessment tasks, and impact of the existing curriculum. Information on what was needed in a new curriculum was also provided. There was an effort to determine the impact of the curriculum on developing the ideal Caribbean citizen and the learner-centredness of the curriculum. The issue of the autonomous learner was also addressed in the data gathering phase of the project.

There were approximately 20 data gathering meetings over a five-month period. All meetings were approximately 60 to 90 minutes in length and were held on the campus and at sites convenient to the parties concerned in nearby

communities. Checklists and rating scales were also used to determine if the programme objectives were actually realized. Examination results and work s amples all assisted in providing data about how the curriculum was delivered and the outcomes of the curriculum implementation. Previous reviews and programme objectives were examined and analyzed.

Teaching-learning facilities including classrooms, the library, the farm, laboratories, internship sites, and work experience venues were observed and evaluated. Verbatim notes were taken and transcribed for the focus groups and meaningful notes were taken of the interviews, town hall meetings, and observations.

The research/curriculum 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 followed in a slavish way. The four levels of the process consisted 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.)

Every effort was made to use the questions in the Kirkpatrick's framework to guide the conversations and especially the questions.

Data Analysis

The data were analyzed using traditional qualitative methods for qualitative data including, deep reading of notes, identifying of categories and themes. For the archived 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 the implementation which cannot be reported in this paper since it has not yet occurred.

Summary of Findings

Five of the major categories or themes that were identified and are important in curriculum work are identified and highlights are presented in this summary. These factors were

1. The constraints of the institution – Institutional Factors
2. The dissatisfied student – Student Factors
3. The underpaid faculty – Faculty Factors
4. The supportive and expectant society – Societal Factors
5. The under-resourced learning environment – the Learning Environment.

Institutional factors

It was recognized that curriculum reform and redevelopment do not take place in a vacuum. There are institutional factors that must be present to ensure the new curriculum is successfully implemented. The situational analysis unearthed several institutional factors that were important, and it was felt that they would impact in major ways, the success of the project, that of revising the curriculum and its subsequent implementation.

Some aspects of the physical space of the campus did not support learning in helpful ways and this was very disconcerting to students. Many classrooms were problematic for learning, the labs were insufficient, and necessary items were missing. Overall, the physical infrastructure was not supportive of the educational mission of the institution. Students pointed out that when it rained heavily, classes were affected due to the poor drainage around classrooms and walkways. Further, they opined that there were very limited dormitory or halls of residence facilities available to students.

Administrative processes including hiring were often delayed and this caused immense problems. Other concerns included the payment of salaries and allowance. There was a general feeling that the university needed to do more to support its faculty. The approval process for new curricula was also cause for concern since the process tended to be overly long and drawn out. In terms of quality assurance, the lack of a functional oversight body was noted. Hence,

attention was called to the constraints of the institution or the constraining institutional context and how this could undermine and devalue efforts at curriculum reform.

Faculty factors

There was general openness and willingness to engage in curriculum reform on the part of the faculty. In fact, the team felt that 85–90 per cent of all faculty members were supportive. However, some faculty members indicated their reluctance to proceed without training. Others indicated that they had engaged in significant curriculum reform, and hence the process in their departments was almost completed.

Much concern was expressed about teaching loads and lack of meaningful remuneration; hence, underpaid faculty was a dominant complaint, which has huge implications for staff morale. In many instances there were concerns about curriculum implementation since faculty with the requisite skill and level of education were not in place. Staff morale was another concern especially for curriculum implementation.

Student factors

There were concerns about the quality of some matriculants to the degree programmes. The basic requirement for entering the degree programme was passes in 5 CSEC subjects. It was noted that the science background of some students was problematic, especially in cases where physics was needed and a substitute was used. Students felt that electives were forced upon them and expressed the concern that they had to do many filler courses that had no relevance to their degree, for instance a biology major forced to do computer graphics.

The level of dissatisfaction that students had with programmes and facilities stood as a dominant factor. Students complained about the lack of impact of the Student Evaluation of Teaching and the fact that the outcomes, in relation to faculty were not known. More academic counselling was requested by the students since there was insufficient attention paid to structure academic counselling. Some students felt there was need to create opportunities for more

engagement with content outside the focus of the degree. They also indicated that more opportunities should be created for student voices to be heard. There were also concerns about the value of the degree globally and insufficient attention to Caribbean realities. In summary, some students were very negative about the university, the skills and competencies of students being developed, or lack thereof, and the high level of theoretical courses, the lack of resources, infrastructure, extracurricular activities, poor laboratory facilities, and little exposure to technology.

Learning environment

All the participants in the focus groups and town hall meetings indicated that there were pockets of good and meaningful activities within the university learning environment. However, there was much that was unacceptable with the general teaching and learning environment, for example, the library facilities, the lack of computer facilities and Internet access. Accordingly, the dominant response in the findings to the learning environment was the under-resourced factor which had undermined learning potential and had serious implications for the successful implementation of a new/revised curriculum.

The students complained about the pedagogical practices of lecturing. Issues in assessment were problematic for some. Students complained especially about the lack of transparency and perceived victimization during assessment. Some students expressed dissatisfaction with the pedagogical choices since theoretical material dominated the approaches and linkages to the practical relevance were not always done. Issues of language barriers, the need to complete syllabus, and lack of objectivity and alignment in assessment were some of other major complaints.

Many students expressed doubt about the added value of field education and practicum portions of courses. In some programmes, especially those with practical/field trips components (e.g. geography, environmental studies, agriculture), the reactions were that they needed to be more structured and educationally beneficial field trips and practicum were requested. The limited exposure through the internship programme was noted. A number of gaps in the curriculum in the programmes offered were identified by the stakeholders, for

instance report writing skills, computer skills and an orientation to environmental sustainability.

There were expressions of concern about the gaps in some of the programmes in the Sciences. Respondents voiced the opinion that Agriculture and Forestry needed to develop programmes based on local and Caribbean needs. Further, they pointed out that online programmes were needed.

Societal factors

Throughout the data collection phase, several stakeholders indicated their willingness and readiness to support the efforts of the university in developing the high quality graduate that the society expects the university to produce. However, concerns were expressed generally about the deficiency in graduates owing to a mismatch of the curriculum and the knowledge relevant for the various industries. Overall, there was much lament about the lack of work readiness of many graduates. Some stakeholders recommended additional competencies for engineering students, especially those who were to be employed in engineering departments in agricultural enterprises/firms; hence, agricultural and manufacturing engineering should be addressed by the curriculum or the areas where additional competencies were needed. The stakeholders wanted the university to work more with industries to develop the curriculum, and hence respond to the actual needs of the society instead of following outdated content – thereby producing the graduate that would be most valuable to the society.

Curriculum Development

The needs assessment and situational analysis phase of the investigation informed the actual curriculum development/redevelopment exercise. The modified Wolf (2007) model made Stage One of the process the curriculum assessment phase, and Stage Two the curriculum visioning stage.

Stage Two: Curriculum visioning

Having carried out the initial curriculum assessment and evaluation and reviewed the findings the next phase of the project was **curriculum visioning**

(Stage Two). This incorporated five focus groups discussions lasting approximately 90 minutes each and a workshop and brainstorming session/meeting lasting three hours or 180 minutes, 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 inputs leading to desired outcomes and this was facilitated in the workshop by break-out sessions. The indicators were descriptors of what students must do to be considered competent in an attribute: the measurable and pre-determined standards. These would also be used in the continuous curriculum development approach since these measurable indicators would become the basis for annual evaluation of the curriculum outcomes and provide the basis for review and continuous improvement.

The contradictions of Caribbean life (Miller 2009) also informed the development of the concept of the Caribbean person that the curriculum should produce. The importance of an autonomous learner, a thinker, and worker was certainly considered and discussed in the curriculum visioning aspect of the project. This phase of the curriculum development project also incorporated visioning concerning the "Ideal Caribbean Citizen" as developed by CARICOM and the qualities offered were mapped to the recommended content, pedagogical engagements, and assessment tasks that were to be included in the curriculum. This was to ensure that the objectives, content, pedagogy, and assessment tasks recommended were well aligned and could deliver the graduate that the curriculum was designed to produce. Constant examination and re-examination of the process, a feature of the continuous curriculum development (Wolf 2007) process was facilitated.

The use of the CARICOM 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 discussed and visioning done along those lines. This, of course, was in addition

to using international tertiary level benchmarks and accreditation standards. Relating the curricula to the CARICOM qualification and certification protocol was important since qualified Caribbean nationals will want to travel freely within the region to obtain employment.

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. Specific content, pedagogy, and assignments relating to low carbon development and general environmental stewardship were recommended to be included and these were to be done in the writing of the actual programmes and courses. 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 in general but Caribbean sustainability in particular. Each programme delineated the structure, contents, and the various components, including the courses based on the year of study.

The outcome of this stage of the process was a vision of what the curriculum would be. A skeletal framework and measurable indicators completed the process. These would inform stage three.

Stage Three: Programme and course development

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 conceptualization, projection, and clarification. Course development is also a design activity that looks at the specific content to be studied in the course and arranges them in ways that will enable teaching and learning to occur in short segments (one course), usually for a period of 39–45 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 enlivening of the set of indicators developed in Stage Two including that of the autonomous learner that would express the attributes of the ideal graduate of the programme. There was a special require-

ment to demonstrate in tangible ways, the specific approaches that would be used in the courses to facilitate Caribbean identity development. Since the whole process was informed by continuous curriculum development (Wolf 2007), there was examination and re-examination of the activities and the processes in an ongoing way.

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. Basically, the content, the teaching and 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 as well as an identification of programme objectives that were currently being fostered effectively and those which were not. In this way curriculum mapping was realized.

The approaches to teaching and learning were driven by the need for the curriculum to be student-centred, constructivist, experiential and to promote critical, creative, and innovative thinking. In short, learner autonomy and self-authorship as major outcomes were to be achieved by curricular and co-curricular measures, especially in relation to pedagogical engagements. 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. The assessment activities would provide openings for feedback and feedforward. *Feedback* focuses on current performance (and may simply justify the grade awarded); *feedforward* looks ahead to the next assignment, offering constructive guidance on how to do better in future work.

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 and

alignment became major practical activities 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 was a way to document and share curricula across programmes and examine the whole from gaps, overlaps, and redundancies. This approach provided a way of finding out where and how knowledge and skills were developed and enabled programmes to assess how well programming and processing were aligned to intended learning outcomes. This created an opportunity to determine if the objectives were carefully selected, if the content was 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 have been considered extremely important in higher education (Biggs 2002; Wolf 2007). Accordingly, the developing courses were revisited and re-examined with specific concerns about alignment in the following areas:

a. programme and course objectives
b. foundational knowledge and course content
c. course teaching and learning activities
d. 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 as well and this will be followed by revisions for full implementation at a later date.

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. All processes were examined and re-examined through the prism of "Caribbeanization in curriculum development." The process was further sup-

ported by a scholarly approach to analysis, application, teaching, and assessment. In terms of pedagogy, the development of critical thinkers, and in particular the autonomous learner, underscored the choice and use of pedagogy. Of importance was the opportunity to utilize the CARICOM 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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