**SELECTED ISSUES IN THE TRANSFORMATION OF THE COLLEGE OF ARTS SCIENCE AND TECHNOLOGY (CAST) INTO THE UNIVERSITY OF TECHNOLOGY, JAMAICA (UTECH): CONSIDERATIONS IN DEVELOPING A LEARNER-CENTRED CURRICULUM AND QUALITY ASSURANCE MEASURES FOR OPEN LEARNING AND DISTANCE EDUCATION**

**By Nancy A. George, Ed. D.**
Director of Curriculum Development and Evaluation
University of Technology, Jamaica
ngeorge@utech.edu.jm

*UTech's vision for the year 2002*
In its Strategic Plan 1998-2002, UTech anticipates that it will:be recognised as a leading provider of quality education[al] opportunities because of the knowledge, competence and flexibility of its graduates quality and professionalism of its staff creative and supportive learning environment it providescommitment to excellence, equity and quality it demonstrates (Strategic Plan 1998-2002: 43)

In describing itself in its Prospectus, 1997-99, the University states that it is "…an organisation committed to quality…with a passion for… technological excellence… [and] a catalyst for growth." (Prospectus 1997-1999: p. 3). Both of these bold statements about the nature and direction of the University of Technology are indicative of the directions in which UTech is moving at present.

As the sole technical university in the English-speaking Caribbean, UTech is committed to providing the widest possible access to its programmes through the broadest of articulation criteria. Therefore, it is experimenting with a diversity of educational innovations to ensure that its programmes are useful to a broad cross-section of people with tertiary-level educational aspirations. However, to achieve its vision, UTech must also support and train its staff to be able to carry out the vision while maintaining academic standards and continuing to meet the needs and expectations of business and industry.

It is an exciting time at UTech for both the staff and students: the University is in transition, moving on from its 37 years of experience as a technical college into its new incarnation as a technical university. This transformational phase in UTech's history is nurturing innovation, encouraging the academic staff to think about their roles in new ways and experiment with the teaching/learning process creatively in order to expand the horizons of the students and broaden participation in a learning culture while maintaining and improving upon the knowledge and competence of its graduates.

How UTech envisions open learning and distance education as part of this transition - and, indeed, the institution toward which it is evolving - is the focus of this case study.

*The origins of UTech*
The College of Arts, Science and Technology (CAST) in Jamaica was established in 1958, serving an initial student population of 56. Operating from the same campus for 37 years, CAST built a reputation as an institution which produced Diploma graduates who were *highly skilled in their specialist areas of study* across a wide variety of disciplines including Architecture, Engineering, Computing, Health Sciences, Catering, Construction, Physical Planning, Technical Education and Commerce. Programmes were introduced over the institution's history to meet both national and regional demands; therefore, the institution grew in response to expressed needs for specific kinds of workers required to develop business and industry in Jamaica and the region.

When, in 1986, CAST was accredited to grant degrees, it encouraged all Departments to develop and offer post-Diploma Bachelor's degrees. In 1988, CAST offered a home to the regional Caribbean School of Architecture. The diversity of programmes offered at CAST and, subsequently, at UTech is reflected in the 1997-99 *Prospectus*, which lists a total of 24 specialised undergraduate and two post-graduate degrees, 35 diploma, eight professional, and 29 certificate programmes designed to serve the needs of approximately 7,000 students from Jamaica and the region.

In keeping with its niche in the Jamaican educational infrastructure, CAST followed the tradition of teaching its students to be able to meet the requirements of final examinations, whether City and Guilds of London examinations or examinations for professional accreditation. This tradition built naturally

on students' primary and secondary school experiences where they had to compete for places at the next level of schooling. Students trained to write examinations tend to have a very narrow perception of their field of study: what they learn about the school culture is how to write examinations successfully and find "right" answers to examination questions.

However, CAST expanded this examination focus to include skills development. The College provided on- campus workshop and laboratory learning facilities and combined these with opportunities to work in their field of study to develop marketable industry-based skills. Courses to be completed in both Certificate and Diploma programmes at CAST followed this teaching/learning pattern. The programmes also attempted to determine everything the student needed to know to function successfully in a particular field of study, deliver that knowledge and, as much as possible, develop the student's skills to accompany the knowledge. The programmes were packed with a large number of courses, all of which culminated in examinations: the focus was on *breadth* of coverage rather than *depth*.

*CAST's metamorphosis: birth of a technical university*
The institution was formally accorded university status in September, 1995 as the University of Technology, Jamaica (UTech). The transformation to a university has been gradual over the first three years; however, the process is gathering momentum in the current Academic Year (1998-99) with the reorganisation of Departments into five Faculties comprised of eight Schools and two Departments, and the development of plans to introduce a total of 18 four-year Bachelor's degrees in Academic Year 1999-2000.

A major change in the approach of the University is in its philosophical commitment to building a learning culture, where the priority learning for students is *how to learn*.

*Challenges associated with the transition*
The challenges associated with the transition are many, and several of them are critical to the future of the University and its student clientele, past, present and future. For the purposes of considering the current and medium term role of distance education and open learning in the University, however, this case study will limit itself to discussing four significant challenges UTech is addressing in the transition process:
the transition to a learning culture
staff involvement in developing new curricula
staff training and academic upgrading
plans for ensuring programme quality

*Definition of a learning culture*
For purposes of this paper, a "learning culture" is defined as one in which the people, the activities available, the structures, resources and the operational design accept the following assumptions: those involved in the institution, whether students, instructors, administrators or ancillary staff, are interested in and committed to learning as a priority in the way they plan and operate in their lives; learning is stimulated by and dependent upon curiosity, interest, mutual respect among learners, open two-way communication, access to and availability of resources and the individual's assumption of responsibility of learning.

*Building commitment to the process of change and its outcome: curriculum development*
The importance of involving staff actively at all levels in the transition cannot be over-emphasised. The senior administration of UTech firmly believes that, unless there is significant staff involvement in the curriculum revision process, ongoing staff training and coaching supporting the process, and specific reorientation of the students (who are also unused to the proposed learning culture and all its implications), the transformation of CAST to achieve the vision of UTech will be extremely difficult, if not impossible.

The process of curriculum development for UTech provides an excellent illustration of UTech's reliance on staff participation to accomplish its transformation. As a first step in restructuring the curriculum and programmes, a workshop entitled "Curriculum 2000" was held in December, 1997 at which senior academic staff reviewed the existing programme design and workloads for both faculty and students. As a result of this workshop, the participants agreed that the workload had to be reduced and the scope of courses broadened in keeping with a university mandate. The participants drafted the

framework for new four-year Bachelor's programmes based on models used at other universities, and agreed that programmes should restructure according to this framework.

As a result of work done in and following this workshop, in Academic Year 1999-2000, UTech is introducing significant changes in programme design and course delivery. First, new programmes are being designed and the courses in them semesterised. Up to the present, students are required to take (and attend regularly) up to 12 full-year courses requiring three to five classes per week; in the new programmes students will take a maximum of six three-credit courses per semester with a maximum of 18 contact hours per week. Although this load is still heavy, it will nevertheless allow students significant time for research, library work, and pursuit of their own interests within their programmes, instead of their interests being dictated by their lecturers.

Faculties have been requested to develop at least one four-year Bachelor's programme for introduction in Academic year 1999-2000. Each School has assigned the programme design and syllabus writing for the new courses to a team of academic staff. Although few staff have actually written curriculum previously, their learning process is built on an experiential model. Staff teams work with the Faculty-appointed Curriculum Co-ordinator and the Office of Curriculum Development and Evaluation to discuss and work through the new curriculum design. At scheduled times, Curriculum Development Workshops are held to allow these teams to present their proposed new programmes for peer review and sharing with other Schools in the University. This sharing is valuable for a number of reasons: first, it builds inter-Faculty awareness of each other's programmes; secondly, it improves the skills of the academic staff at all levels in curriculum review and analysis, and thirdly, it legitimises the staff's acquiring skills through an experiential model. Finally, this model is beginning to unite the Faculties behind the vision of the University. Schools are beginning to see the inter-connectedness of courses in their respective programmes, and are planning to recommend the introduction of University-wide courses that can be taken by students from all Faculties.

*Access to the Internet and Intranet to support the development of an integrated learning culture*
Plans for faculty and student access to the Internet and a campus-wide Intranet will assist in nurturing a learning culture at UTech. In 1998, the backbone of an asynchronous transfer mode (ATM) network was completed. The network links the library, the student dormitories, all the faculties and administration centres through a campus area network (CAN). Once students and academic faculty alike can access the Internet and the Intranet, the curriculum development teams can entertain innovative methods of course delivery which place more of the responsibility for learning on the students and promise to alter the role of the course leader significantly in the teaching/learning process.

*Open learning on the campus in support of the development of a learning culture*
The availability of nodes at which students can log on to the CAN will encourage the introduction of open learning on the campus. Course leaders will be encouraged to put assignments, references, course content and exercises to assist in the mastery of difficult concepts on the intranet, and students can access them at their convenience. Of course, the introduction of this innovative approach to student access to learning support will need careful introduction, since neither the lecturers nor the students have any experience in this methodology in the context of formalised learning.

However, as an intermediate step toward this open learning concept on the campus, the Faculty of Education and Liberal Studies has established a Communication Learning Centre which has audio and visual resources available which students can access on their own time and at their own convenience. This self-learning centre provides programmed software for learners on CDs to improve their writing skills. As well as commercially available software being provided in the Centre, members of the academic staff are writing and adapting software to meet the specific needs of the Jamaican linguistic context. In addition to the software and relevant hardware, learners can request tutorial assistance which will be designed to meet the learner's needs. This Centre is in its second year of operation, and, as an open learning pilot venture, is in its infancy in the current academic year; however, it is expected to be fully operational in Academic Year 1999-2000.

*UTech preparations for distance education*
While CAST realised the potential of distance education in its strategic plans from as early as 1990, it has been only in the past two years that UTech has undertaken experiments to operationalise open learning and distance education – and even these are in the pilot stage at present.

However, several technological infrastructure pilots are underway on the UTech campus to ensure that programme delivery to learners at a distance will be possible when student demand and programme development warrant a full-scale pilot of the concept. ISDN communication has been piloted between a Costa Rican broadcast resource and UTech, and, at present, a pilot of Nortel audio visual broadcast equipment is underway at five sites on campus to explore the potential of the virtual classroom located in walk-in sites. Since this experiment is in its earliest stages, as yet there is little to report outside of the acquisition of the technology and the enthusiasm of those participating in the endeavour.

Within the next three years, UTech plans to establish an Open Learning Centre which will manage both distance and open learning opportunities offered by the University.

*Staff upgrading*

As well as inheriting all the existing programmes of CAST, UTech inherited its entire staff complement. However, the academic qualifications of teaching staff at UTech are significantly different from those required at CAST. In keeping with the minimum requirements for lecturers at universities world-wide, UTech needs to have academic staff who have a minimum of a Masters' level qualification. In 1998, the Human Resources Management Division reported that more than half of the academic staff - 53% - still required upgrading to the Masters level; however, only 12% of the staff were actively pursuing studies at the Masters degree level.

The University has made a commitment to assist where possible with the cost of fees for academic upgrading; however, since the upgrading exercise will involve up to 96 persons, the cost of the proposed upgrading to the Masters level alone between 1998 and 2002 is estimated to require the equivalent of US$353,520 exclusive of staff replacement costs, which are estimated at three times the cost of the courses themselves.

In 1998, the University budget allocated the equivalent of US$ 85,000 to the upgrading process; however, this sum could support only 10 persons, since the majority were studying overseas. Therefore, clearly, alternative strategies are going to be necessary to meet the University's commitment to assist the large number of faculty who need academic upgrading to continue to work in the University.

*Distance learning for academic upgrading*

The rapid growth of Masters programmes available on line from a wide variety of reputable universities offers a viable, economical alternative to having staff travel abroad to pursue their studies. By enrolling in a Master's programme that can be pursued on line, the academic staff and the University both have distinct advantages:

staff will not need replacement since they can pursue their studies while they continue to work;
the area(s) of focus for the Master's degree can relate directly to work in which staff are currently engaged and be directly relevant to both the staff members and the University;
facets of the transition process and the University's planned growth in programme offerings, policy development, methods and modes of programme delivery and student assessment as well as the education/industry interface and technological advances in specific subject areas can all provide obvious and necessary foci for concentration in Masters level programmes from which the University as well as the staff member can immediately benefit;
staff members' pursuit of higher degrees at a distance within the UTech community will provide real examples of alternative methods of learning to the student community;
those experienced distance learners will be available to be part of the design team for the University's own ventures into the provision of programmes via distance education to other parts of Jamaica and the Caribbean region, and
staff who are pursuing their studies by distance via the Internet will also assist in building the research culture of the University, since those staff members engaging in Masters programmes will still be working with their colleagues while they study.

In lieu of offering them financial support, the University may be able to offer them reduced teaching responsibilities for the duration of their programmes, an alternative which will reduce the number of replacement staff necessary if the same staff were to pursue their studies abroad.

Distance education using the Internet offers genuine promise to those academic staff who must upgrade their academic qualifications in the next three to five years.
To complement the staff's academic upgrading, UTech is also piloting in-service training for lecturers (course leaders). The training assists those responsible for course design and delivery to acclimatise to the instructional process – not only "hard" instructional technologies like computers and audio-visual aids, but also – and perhaps more importantly - the "soft" technologies which facilitate the learning process: planning and development of learning units, learner-centred instructional design, assessment, pacing of activities, and principles of adult learning. This in-service course was offered for the first time during the summer of 1997 and is currently being evaluated by the learners and the course tutors. This in-service training can offer support to those involved in Master's programmes via distance education who choose to study the learning process.

*Quality assurance in UTech programmes*
UTech is concerned about *quality assurance* in all its programmes. UTech's goal is to ensure that its programmes are at least comparable to those offered at the same level elsewhere in the world, and that the those programmes are of a sufficiently high standard to obtain recognition by employers and other universities for the degrees earned in them nationally, regionally and internationally. Upgrading the theoretical knowledge of academic staff and their ability to manage the teaching/learning process are major ingredients in quality assurance.

In Jamaica, there is also an existing national tertiary assessment infrastructure, the University Council of Jamaica (UCJ), which provides an important objective review of the programmes offered at all tertiary institutions. All programmes will be submitted for accreditation to the UCJ. In the meantime, UTech has received UCJ accreditation for two programmes in Engineering and has been granted candidacy status for all other existing programmes. In addition, the Caribbean School of Architecture is accredited by the Commonwealth Association of Architects.

What will be important with the introduction of courses offered at a distance via the Internet and/or ISDN facilities will be the involvement of the UCJ in the development of the quality assurance mechanisms.
At present, UCJ accredits only "traditional" programmes delivered in face-to-face classroom situations. Aside from an informal sampling of student opinion about the programme, there are few learner-centred course assessment criteria measured in the UCJ accreditation process.

UTech plans to play an active role in establishing the assessment criteria for open learning experiences and courses delivered at a distance. Since the most important input in such assessment is the perceived value of the programme to the learners, the Office of Curriculum Development and Evaluation and the Office of Graduate Studies and Research will work closely together along with selected course participants (both learners and leaders) to develop appropriate measures of quality for the programme(s) in which they participated. Those academic staff who opt to take their Master's degrees via distance will also be encouraged join in the process of designing and validating quality assurance measures for programmes offered at a distance. Indeed, the development of valid, reliable criteria for measuring the quality of distance education courses in the UTech context could be an exciting Master's or doctoral thesis.

Summary
While the role of distance education and open learning are in early stages of development at the University, the promise they hold for upgrading the resources on the campus, expanding access to UTech programmes and contributing to national and regional growth ensure that they will continue to receive active attention and development as UTech evolves and establishes its leadership in the region.