CURRICULUM DEVELOPMENT AND THE CHALLENGES OF THE 21ST CENTURY

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Abstract — *Examples are presented here on how several schools are meeting the challenges of curriculum development in the 21st century. At Queensborough Community College a Technology Learning Academy program is being developed aimed at providing a special identity for students, grouped by academic program. At Nova Scotia Community College inductive teaching and learning have been woven into the school plan to support NSCC's commitment to environmental stewardship. And at the University of Central Florida and other institutions pedagogical concerns of engineering courses in distance learning environments are analyzed.*

Index Terms — learning academy, special group identity, inductive teaching, environmental stewardship, articulated graduate profile, distance learning, pedagogy, engineering faculty, performance

THE TECHNOLOGY LEARNING ACADEMY AT QUEENSBOROUGH COMMUNITY COLLEGE

The Technology Learning Academy is a program that has been implemented at Queensborough Community College for the purpose of increasing retention and improving graduation rates. It provides a comprehensive program of activities which are designed to establish an environment for student success. Studies tell us that students who become involved and engaged in their college work and their extracurricular activities are more likely to continue and succeed. Students who form friendships with peers and faculty will do better academically. The program is aimed at providing a special identity for students, grouped by academic program. Its goal is to give each student a peer reference and support group and to provide faculty and staff "faces" for their program at the College. Components of the Technology Learning Academy include specialized blocked and linked courses, targeted advisement, and close interaction among individual students, groups of students, faculty, and staff. The purpose is to provide the students with the best educational experience possible for them at the College, and to move them through to the achievement of their educational goals, especially graduation, in a timely fashion.

All incoming technology freshmen are targeted for membership in the Academy. *The Academy is presented to students, not as a choice, but as the way in which education is carried out at QCC.* From the beginning, the emphasis is on academic success and on goal setting, mutual self-help, responsibility and full utilization of support services. Plans to graduate in two to three years are formulated and emphasized. The effort is to apply what has been learned about the most effective pedagogies to the Academy. Most incoming Academy members are placed into blocked classes, which may also be linked (Learning Communities). The blocks include an Introduction to the College orientation class, aimed at academy students. For those students needing developmental work to reach the levels of the Academy blocks, additional effort is made to channel them into summer early immersion programs. Academic advising for programs is structured through the Academy. Among the ideas that have been put forward to build a sense of belonging within the Academy is a dedicated room for each Academy, to serve as its tangible headquarters. Regular speakers, focused on the discipline's academic and career challenges and possibilities is important, as is regular structured contact with faculty. Internships and campus jobs are another dimension. Furthermore, visible symbols such as banners, caps and t-shirts are used to foster a sense of community. [1]

AN OLD TOOL WITH A NEW TWIST - NOVA SCOTIA COMMUNITY COLLEGE (NSCC) INNOVATES WITH INDUCTIVE TEACHING METHODS TO PROMOTE A SUSTAINABLE WORLD

The School of Trades and Technology informs, influences, and inspires learners in the area of environmental

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sustainability through the adoption of an inductive teaching and learning philosophy. Teaching inductively promotes a culture of collaboration through a real-world application to learn how and why things work, starting with the particular applications, and then moving to the more general principles. Inductive teaching and learning involves everyone, with all types of learning, all the time. The challenge is to create learning environments that use an inductive approach to what is done, and how it is done. A synopsis will be provided of how inductive teaching and learning have been woven into the school plan to support NSCC's commitment to environmental stewardship, and the way business is done. Inductive teaching will assist the graduate of NSCC to achieve the articulated graduate profile required to meet industry needs for the present and the future. [2]

ON PEDAGOGICAL CONCERNS OF ENGINEERING COURSES IN DISTANCE LEARNING ENVIRONMENTS

The distance education and learning have emerged as a popular method of instructional delivery in engineering and technology-related fields. Many faculties of engineering and technology may found themselves teaching online classes or planning on teaching one. In this process, educational quality is a crucial concern to the faculty. Psychological setbacks and barriers among engineering students also add another concern for the faculty teaching in a distance education environment, i.e., students may have fears of losing partial credit in an online multiple-choice examination. The asynchronous and economical advantages of distance education and learning that make offering and taking them very popular among the students. Some background, discussions, and lessons learned from our experience with online instructions in engineering and technology and students' performance are presented in this paper. We use some accurate but crude empirical data and evaluation methodologies to draw our conclusions. The article's discussion encompasses six faculty concerns of security, interactivity, equity, hands-on demonstration of concept, team-workability assessment, and ethics, all related to online courses in engineering and technology. Some of the results presented here are confirmed intuitively through our informal discussions with the colleagues having similar experiences. We conclude that in "open and honest" online learning environments such as those in most institutions of higher education in the United States, the most important focus should be on the "ethics" education of the students in mostly a minimal-proctored learning environment. [3]

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