Will You Still Be Teaching In The Twenty First Century?

by Dr. Theodore Panitz

Professor of Mathematics and Engineering

Cape Cod Community College

College professors are at a crossroads. We are under increasing pressure to incorporate technology in our courses and to offer extraterrestrial learning environments commonly referred to as cyberspace or internet courses. Simultaneously we are expected to teach students how to think critically and interact socially in preparation for the workplace. Something is missing from the discussion on how higher education should be changing to meet societal changes. The question which should be driving this debate is "what is the underlying philosophy of education and the learning experience?"

Several questions spring to mind and should form the basis for discussions about the future of higher education. They are:

\*Should we facilitate learning through student centered courses or focus on information transfer to students and thus let computer companies take over higher education teaching responsibilities through information delivery devices such as CD-Roms, the internet, and video courses?

\*Is education a matter of convenience of time and place or should we encourage students to deal with the hard work and difficulties associated with student centered learning?

\*Should we provide our students with as much information as possible, usually through a professor centered expert lecture with the student as a receptor, or should we use student centered approaches to learning which provide students with the capability and desire to understand what information they need to make a decision and how to get and use it?

\*Do we wish to create learning environments where the students never see each other or "talk" to the professor except in electronic chat rooms, or should we focus on harnessing the power of learning though social interactions within the classroom and outside of the class?

The author believes that the rush, throughout the world, to infuse technology in every course and provide asynchronous internet courses to all students seriously threatens the social aspects of learning and the need for human interaction which enables students to become productive members of the various academic, social and workplace societies they wish to join. For example people become mathematicians, historians, writers, etc. by learning the vocabulary and culture of their chosen field(s) of study. They must learn how to communicate their ideas to their peers and people outside of their field through writing and oral persuasion. Argumentation, discussion, and consensus building through human interaction is the most effective learning paradigm developed to date. Student centered classes accomplish this in every class.

Communicating over the internet is only one small tool available to us and because it does not come close to providing the human interactions that classrooms do it should not become the primary delivery system in higher education. I want to be in the classroom with my students, to observe their reactions to learning experiences. I want to observe their body language when they interact with their peers and myself. I want to have individual discussions with students in real time in order to share our experiences regarding learning and life in general. I am not impressed with internet discussions where a smily face on a computer screen replaces a real smile or capital letters are used to emphasize shouting, etc.

Cyberspace and asynchronous distance learning are being presented as the savior mechanism for all of higher education and the future delivery system for colleges and universities. What is the driving force behind the effort to infuse technology into college courses? Initially distance learning was promoted as a way of reaching a few students in remote or inaccessible locations. This is no longer the case. Economics now drives the rush to cyberspace. College administrators each envision the internet as a mechanism to reach a vast pool of applicants throughout the world. As they consider the potential market available to them the dollar signs in their eyes grow exponentially, blinding them to the real basis for learning, human interactions. The fallacy in their reasoning is that it only takes one organization or company to develop and deliver internet courses. Computers and education technicians will take care of the delivery. Information, exams, paper grading, chat rooms, etc. can all be delivered through a single computer. Technicians can be hired as tutors instead of faculty. The real driving force into cyberspace is the privatization of higher education through corporate America.

We in higher education cannot compete with the big computer software companies in the production of technology oriented bells and whistles meant to enliven the transfer of information to students. We can compete, however, by changing our pedagogy by moving away from the lecture format and making students the center of the learning experience. There are many interactive learning paradigms which could be used to create student centered courses, giving professors a choice in their approaches to teaching.

Lecturing is used by most professors in higher education as their principle teaching strategy. This has created the rationale for replacing lectures with information delivered by computers. If we can replace professors with teaching assistants in recitation sections then the next step is easy, replace professors with videos of the best lecturers and use computers and technology assistants as teaching assistants. Lecturing is a flawed approach to teaching and must be replaced by more effective teaching paradigms.

Administrators from the president of each college to department chairs must set a new tone in the discussion of what learning means by encouraging faculty to learn about student centered learning paradigms and by providing the resources to make this discussion and transition a reality. Faculty development efforts should move in this direction by providing the means for faculty to become informed and trained in the use of interactive learning paradigms. Faculty need to be encouraged to involve students in every aspect of the teaching/learning process and move away from the sage on the stage role they now play. If administrators spent half the time and energy they now use to promote technology instead to encourage faculty to use student centered learning paradigms we could transform our colleges and universities into true institutions of learning.

This position paper will explain the benefits of student centered learning paradigms, provide examples of interactive learning structures, and analyze the problems associated with lecture and technology based information delivery teaching systems. A series of policy statements will be presented. These policies are needed for colleges to facilitate changes necessary for student centered learning to become a reality.