

## RETHINKING TEACHING ABOUT TEACHING: A RATIONALE FOR WEB-BASED TECHNOLOGY

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This isn't a paper about why one should use technology in teaching at the college or university level. It's not even a paper about how technology can improve teaching. Rather, it's a paper designed to encourage faculty members to rethink their teaching in light of their students' learning and the possible role that technology plays.

If our definition of teaching and learning is the transmission of information, then technology represents a threat to the way that we work. From a transmission of information orientation, we are likely to view the role of technology helping to present information to students by using PowerPoint slides for a lecture or establishing a web site. But if we view teaching as being primarily transmitting information, there is likely to be a more effective lecturer beamed in by satellite or a more entertaining (or at least, less expensive) presentation on videotape. On the other hand, just as the technology of printing textbooks didn't replace lecturers in the medieval university but made them more effective, technology becomes a tool which can enable us to promote more effective teaching and learning.

Consider these concepts in teaching and learning and how technology plays a role in helping faculty to become more effective. Literature on teaching and learning (Laurillard, 1993; Svinicki, Hagan, & Meyers, 1996) emphasizes these shifts: (1) A change in the role of the faculty member from being a transmitter of information to a facilitator in helping students access information. (2) This shift produces a more a student-directed than teacher-directed classes. (3) A shift in emphasis toward more process-based instruction that provides students the tools for continued learning as opposed to a content-based focus. (4) An emphasis on presenting learning in a context in which the students understand the information and tasks in relationship to their personal goals and backgrounds. (5) An emphasis on presenting multiple options and opportunities for students to learn.

Even more important than the trends in teaching and learning described in the professional literature for rethinking and redesigning a course are the desired outcomes for that course. Faculty must decide: (1) What changes in knowledge/skills do I expect from students by the end of this course? (2) What difference will the knowledge/skills make in five years? (3) What have I provided with regard to continued student learning with regard to this course, e.g., attitude change and motivation? (4) What changes do I expect in myself as a result of teaching this course?

For courses in fields of professional development (e.g., teacher education, nursing, and business), we expect to pre-

pare students to be effective decision-makers. In courses in professional development programs the concept of affordances is emerging as an important component in teaching and learning (Walker-Andrews, 1993).

Affordances are the way in which an individual experiences a concept or event. That is to say, the combination of the objective qualities and subjective perceptions of an event make up its affordances. Awareness of affordances is a critical component of instructional design when students are expected to be decision-makers because the ability to accurately perceive problems, define, and categorize problems is the initial phase in decision-making.

The role that technology plays in helping students become effective decision-makers begins with access information and content. Technology offers multiple opportunities to develop student skills related to affordances for decision-making. In teacher education programs, for example, it is essential that students are able to assess pupils' learning problems (i.e., affordances) in order to select appropriate instructional interventions. Web-based technology provides the ability to record samples of pupils' reading error patterns and makes them available for analysis by students preparing to be teachers. This can be done by recording reading samples on a digital recorder (e.g., the recorder on a lap top recorder) and saving them as .avi files linked to a course web site. These files can be downloaded and played through Windows 95. In this way the technology enables students to control their own access to critical course materials.

Using current research tools, such as Galileo, enables students to access current information on line that previously had been available only in the most extensive research libraries. In addition to Galileo, additional specific resources can be linked from the course web site. Depending on the content emphasis of the course, government sites and specialized libraries and resources can all be made readily available to students using web-based technology. The access to information involves more than access to printed materials. It can also mean access to people. Using technology students can contact resource persons, authors, and authorities for information on topics that are germane to the courses that they are studying.

It is important to understand the role that the faculty member has as facilitator in the process of accessing information. Faculty can model decision-making in search techniques, can teach students an appropriate way to access people and request information from them, and set a general tone of how the investigation of a topic brings its own

level of satisfaction. If our goal is to enable our students to become independent learners, then a shift in our role as facilitator for, rather than deliverer of information, is critical.

A final major way in which technology offers access to information for students who are preparing to become *decision-makers* is through providing students with connections with real-life situations. Videotapes offer a convenient way to capture real-world settings. Even more flexibility is provided through digitizing the tapes on to compact disks. The CD format allows easy access to each clip and the ability to easily review a segment of a demonstration. The CD format offer real promise as a means of developing the skills to assess real-life events (affordances) in preparation to make decisions about whether and how to intervene.

Technology offers more options in developing decision-makers with respect to increased communication between faculty member and students and among students. With the coming of the semester system to the University System of Georgia, planned interactions in communications among faculty and students will be redefined. E-mail advising, listservs, discussion groups, and conference rooms/chat rooms offer additional options to increase this interaction. For example, using the "forms" option for Microsoft FrontPage, a faculty member can include a student response possibility on a course web-site. This will enable students to provide anonymous feedback between classes as to what they did or didn't understand about a particular class. This can be an especially helpful option with regard to clarifying information that students can understand and adding information that may have been omitted, or in confirming that they did understand.

In addition to soliciting information about the clarity of the class, providing content on a course home page and having students interact with that material promotes the process of teaching and learning. Additional information to assist in assignments can be posted on the home page. Students can be asked to turn in work or, after a class discussion, provide addendums to their assignments that can be turned in using the "forms function" on a class web site. The effect of this technology is to extend the interaction between the faculty member and student beyond the limits of the class and use the intervening time between classes to promote additional learning.

Technology offers options for students to communicate with each other on collaborative projects. The tools for this are varied, depending on the sophistication of the students (and faculty). Students can use a discussion list site to read and react to ideas developed by their classmates. Using the cut and paste functions of the operating system, students can transfer the content they have developed on a word pro-

cessor and collaboratively construct reports and projects electronically on a class discussion site.

Finally, technology offers multiple options for learning for students. Unlike a linear instructional design that is teacher-directed and locks students into following a pre-set instructional sequence, faculty can structure technology to offer students the flexibility to access course information in multiple ways. Web-based course resources provide student-directed options to select, review, and repeat access to resources. Technology also offers students access to resources about developing the skills needed for academic success. Excellent links exist to resources for writing papers, study tips and assistance in using texts (<http://www.gsu.edu/~esljmm/studyskills/Studyweb.htm>).

In conclusion, it is necessary for the faculty member to have developed a clear sense of the knowledge and skills that students are to develop within each course before considering which, if any, technology might be appropriate and how it is to be applied. As one considers what a student might use from a particular course in the future, it become clear that if we see our role as one of presenting content, then we risk our courses becoming as books, i.e., useful, but at risk of quickly becoming out dated and easily shelved. If, however, we view our role as developing the process of learning in our discipline in our students, their experience from our courses will continue to grow as they expand and elaborate on what we have planted. \*

## References

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