Faculty Attitudes about Instructional Technology in a Metropolitan University Classroom

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Abstract

The purpose of this study was to explore faculty attitudes about the use of instructional technology in the metropolitan college classroom with the goal of developing a theoretical framework on those attitudes. The researchers found that faculty have concerns about the ability of instructional technology to enhance student learning. Furthermore, many professors still view instructional technology simply as a tool for information dissemination and not as a networking medium.

There is no doubt that the technology explosion has influenced college education. Many educational technologists agree, however, that the explosion has failed, as was first predicted, to transform college education (Schofield 1995). It has been suggested that one culprit of this failed transformation may be the lukewarm reception by college faculty to instructional technology. A study by the University of Southern California revealed that only 53 percent of college and university faculty used computers to aid in the educational process (DeSieno 1995). While that study may be dated, in a more recent article Lehman (1998) identified several reasons why college professors are still not warming to the use of technology.

Why do some faculty give the use of technology a lukewarm reception? More often than not, the resistance to using new technology stems from certain emotional barriers that faculty experience when they are asked, or are forced, to use equipment that they are not comfortable using for various reasons. Some of the barriers that technology advocates face when trying to get their colleagues to use these gadgets include the fear of becoming facilitators instead of teachers, losing control over the teaching process, and an increased workload associated with adapting to a new teaching method (Lehman 1998). Furthermore, the professors in Lehman's study shared concerns about receiving inadequate training and support on the use of instructional technology.

In the University of Southern California study, DeSieno (1995) reported that faculty viewed technology as simply the latest collection of highly touted tools unable to deliver significant improvement in student learning. In a more recent study, Rickard (1999) summarized faculty expressions of distrust in the permanence of technology as "plain old fear." Rickard found that faculty believed that the use of instructional technology was simply the latest fad. In fact, many of the faculty members in Rickard's study expressed the desire to retire long before they had to confront using

these cursed devices in their classrooms and adapt to the change that would inevitably result in their traditional methods of teaching.

According to Noblitt (1998), faculty members fear change because it diverts energy from normal standards of productivity into new activities, often with uncertain outcomes. Furthermore, he states that the "information explosion" redefines the conditions of psychological and economic well being for society and certainly for students, and ultimately alters the dynamics of teaching and learning. The adaptation of technology to classroom use takes more time, a precious commodity to an already over-loaded faculty (Cardenas 1998).

Faculty attitudes about instructional technology influence the successful implementation of technology in the classroom. Only faculty can design authentic uses for technology as related to student learning (U.S. Department of Education 1999). Only faculty can ensure that students will have the ability, need, and willingness to use instructional technology. As investment in technology increases on most, if not all, metropolitan campuses, it is the faculty who will construct the learning environments that, hopefully, will result in some level of return on that investment. Because of the importance of faculty to the success of technology, it is imperative to continually explore faculty attitudes about the use of technology in the college classroom, identify those attitudes that serve as barriers to successful implementation of technology, and develop strategies to eliminate those barriers.

Method

The purpose of this qualitative study was to explore faculty attitudes about the use of technology in the metropolitan college classroom. Four electronic focus group sessions were conducted with faculty employed with a metropolitan university located in the southwest. One focus group was conducted with each of the following faculty ranks: (a) instructor, (b) assistant professor, (c) associate professor, and (d) full professor. The focus groups were homogeneous and were based on faculty rank to eliminate any problems with junior faculty feeling uncomfortable talking openly about technology in the company of senior faculty. The composition of the groups also allowed for ease in cross-rank comparisons of attitudes.

A total of twenty-eight professors participated in the electronic focus groups. Using the 1998-1999 faculty phone directory from the southwestern university, the researchers sent a memo to a purposive sample of 100 faculty requesting their participation in a focus group session. Four sampling criteria were used: (a) to select four sample groups based on faculty rank with at least 25 faculty names in each sample; (b) to select a representative number of participants from each college, department, and discipline; (c) to select faculty who were available on-campus during the day for the focus group sessions; and (d) to select faculty who teach, or have taught, undergraduate courses. In the memo, participants were encouraged to contact the researchers by e-mail to volunteer for a given focus group session. Prior to each session, the researchers contacted the volunteers to remind them of their scheduled session. Last minute cancellations by faculty forced the researchers to return to the sampling frame to select additional volunteers for some sessions. Those volunteers were contacted by phone requesting their participation.

The electronic focus group sessions were conducted in a decision-support center located on campus. The center was equipped with 13 networked, personal computer compatible workstations, one server, and a facilitator workstation. The software used for the focus group sessions was Group Systems, version 2.0, by Ventana Corporation. At the beginning of each focus group session, the facilitator explained the technology to participants along with an explanation of how to respond to questions via the computer. After a brief practice session using the technology, the facilitator engaged in a guided-question-and-answer process using a pre-determined focus group script via the facilitator workstation. The guided process included two phases. In the first phase the facilitator posed a question to the group. Individually, the participants responded to each question via the computer. In the second phase, the facilitator opened the network to allow all participants to read all responses. Then, through networking, the participants were asked to converse with each other about the responses. Along with the focus group facilitator, a scribe attended each session to record nonverbal cues. A transcript from each session was printed immediately following the session.

A team of four researchers analyzed the transcript searching for codes related to faculty attitudes about technology. Concurrently, a team of four auditors also analyzed the transcript for attitude codes. The two sets of codes were compared with the two teams reaching a consensus on the final set of attitude codes. A third research team reduced the attitude codes into overall attitude themes related to the use of technology in the college classroom. Finally, a fourth research team used the attitude themes to develop the overarching attitude patterns and construct from those patterns the final theoretical framework. Throughout this process, from coding through the development of the theoretical framework, approximately 15 different qualitative researchers were involved in the data analysis process.

Faculty Attitudes about the Use of Technology in the Metropolitan University Classroom

The resulting theoretical framework for faculty attitudes toward the use of technology is divided into two primary components. The theoretical framework is designed with these two components to demonstrate the division in faculty attitudes between the influence of technology on education and the influence of educational issues on technology. For metropolitan university faculty, the use of technology in the college classroom is much more complex than simply installing a computer.

The first component, or the theoretical framework core, is a representation of the six theoretical constructs that faculty believe are influenced by the use of technology in the classroom. During the electronic conversations, faculty expressed thoughts and opinions about the influence of technology on student success, student-to-student and student-to-faculty interaction, and the quality of instruction. They also discussed the influence of technology on access to information, the logistics of the college classroom, and traditional methods of teaching.

The second component of the theoretical framework, or the framework parameter, is a depiction of those structural and educational issues that faculty believe will have an influence on the successful implementation of technology in the classroom. Within the structural influence, faculty discussed a concern about receiving quality, on-going

training for faculty and students in the use of the new technology. They also expressed a concern for the quality and availability of ongoing support to maintain old equipment and purchase new equipment. The faculty who participated in this study also talked about issues related to student learning, the characteristics of their ideal classroom, and their desire for control over the teaching process that would influence their use of instructional technology.

Theoretical Framework Core: The Influence of Technology on Education

The following section is a detailed narrative that operationally defines the six theoretical constructs related to faculty attitudes about the use of technology in the college classroom. These constructs summarize faculty perceptions concerning the advantages, disadvantages, enhancements, and distractions of instructional technology.

Student Success The faculty in this study expressed a myriad of concerns on the influence of technology upon student success. Their concerns addressed the ability of technology to serve both as an enhancement of, and as a distraction from, such success. As a means to enhance student success, technology was viewed as an instrument to heighten student learning. Similarly, the participants collectively expressed the belief that the use of technology in the classroom improves authentic learning experiences. The faculty stated that from the supply of real-world experiences offered by technology, students will "learn the techniques used outside the classroom," be assisted in "interaction with the outside business world," and be taught useful skills that "will be valuable to students, not only during school, but all through their lives."

Technology was further perceived as an element of empowerment. One participant stated that "knowledge of modern technology enables one to become more productive and proactive, thus increasing that person's 'power.'" Furthermore, the faculty voiced the belief that technology increases a sense of accomplishment. One participant claimed that the availability of technology in the classroom creates a sense that one can accomplish more.

The use of technology was also viewed negatively in relation to student success. Faculty members voiced concern with the possibility of technology serving as a distraction and as an element of clutter. Technology, according to some of the participants, may distract students from providing full attention to the instructor. It may also create distracting noises in the learning environment. Lastly, the faculty shared their concern that technology in the classroom can make one feel that the classroom is too cluttered and, therefore, it may distract from student learning.

Student Interaction Many insights were gained as the participants shared their views on the influence of technology upon student interaction. They discussed the significance of interaction between students and faculty. The faculty expressed a belief that technology may require the learning of new methods of interaction, but should never eliminate face-to-face instruction in the "physical proximity" of the students.

Likewise, the faculty discussed the importance of interaction among students. Great emphasis was placed on the value of group work and student participation through classroom presentation and discussion. Within the discussion, the faculty emphasized the importance of a classroom that is conducive to both large and small groups. Tech-

nology, to these faculty, serves as either an asset or hindrance to group work, depending on room arrangement and technological capabilities.

Throughout the discussion, the overall faculty sentiment emphasized technology's ability to promote or impede student interaction. Some participants stated that technology could be used as a tool to facilitate discussion and a feeling of community within the classroom. Likewise, technology was emphasized as a means to promote and encourage teamwork. Many viewed "networked workstations" and "Internet-based instruction" as allowing additional student interaction with instructors. On the contrary, some participants questioned whether students would continue to interact when technology was present. It was evident that the participants placed much value on the human element in interaction, and therefore feared the possibility of technology "dehumanizing the classroom setting." Finally, many expressed a concern over the anxiety that often accompanies technology. The faculty claimed that technology could often be intimidating and overwhelming for both students and instructors. Therefore, the increased anxiety level may hinder, rather than promote, student interaction.

Instruction The faculty also discussed the influence technology has upon the instructional process. Planning is an important element of instruction, and the participants recognized the significant impact technology could have on the planning process. One participant emphasized that preparation for class is more important than the use of technology. Others expressed the view that technology forces instructors to plan properly and become more organized to incorporate the use of technology in a beneficial manner. Therefore, instructors must often learn about new equipment and modern methods of instruction to be effective in planning for the use of technology. While some faculty members stated that technology would reduce the time required for preparation, the majority of participants believed the contrary. Most expressed a belief that the use of technology requires additional planning time. One participant skeptically stated, "Preparation time for technology greatly exceeds any time saved by technology."

Participants also questioned the necessity of technology in the instructional process. Many participants expressed concern that technology often gets in the way of the original learning objectives of a course. The faculty suggested that instructors often feel pressured to use technology. They further expressed frustration over the loss of class time used on training students to use the technology, while the teaching of technology is not their primary purpose. As a result, instructors begin to despise the use of technology, because it drastically changes the original learning objectives of the course. Consequently, some members of the faculty emphasized that technology does not ensure improved teaching or increased learning.

Instruction is also influenced by technology through distance learning and the Internet. For some participants, the ideal classroom would include distance education equipment. Others predicted that distance education via telecourses would die a natural death due to the Internet. Some faculty members expressed a desire for Internet accessibility in classrooms. The Internet, in their opinion, could be a beneficial instructional resource. A similar emphasis on the benefits of the Internet focused on its role as a provider of real world examples in the classroom.

Finally, the faculty shared their ideas concerning the benefits of technology on the instructional process. Some participants professed that the use of technology assists instructors in improving the depth and richness of their teaching. Similarly, others claimed that technology increases lecture potency and teaching effectiveness, primarily through the use of multimedia. Lastly, participants emphasized that technology can provide greater enjoyment within the classroom. In support of this belief, a faculty member currently using technology in a course remarked, "It is the best class I have ever taught."

Access to Information The faculty who participated in this study acknowledged that access to information is influenced by technology. Even with that acknowledgement, however, these faculty members still held dear the importance of access to textbooks and libraries as the true gateway to information. Faculty described books as an organized, comfortable, and non-threatening way to access information. They also talked of the importance of students learning to handle, value, and gain knowledge from fine, classical textbooks. So important was the library book ideal, in fact, that faculty talked of the ideal classroom as a room with access to a private library. When the faculty in this study talked of information, they first discussed the traditional printed page and the rooms built to store those pages. Access to information via technology was viewed as a second option.

According to these university faculty members, the library provides both technological and non-technological information sources. Traditional libraries and online libraries were described as important student resources. As mentioned earlier, faculty further mentioned the importance of including a full library concerning the subject matter in each classroom. Even though faculty recognized the potential value of technology in information dissemination to students, they also voiced the need for continued hardcopies (such as the course syllabus) of information to promote course clarification, organization, and student expectations.

Faculty recognized technology as having both a positive and a negative influence on access to information. PowerPoint presentations were viewed as a good teaching method as long as these presentations were not the only instructional method used by faculty. Furthermore, PowerPoint presentations were excellent methods of information dissemination as long as the technology worked. Access to the Internet was considered a valuable resource, improving student access to current information, assuming that the teacher could keep students from wandering to various web sites not included in the lesson plan for the day.

According to this selected group of faculty, online textbooks will become a part of future instruction. They see a future in which learning will become more Internet-based rather than classroom-based. Students will increasingly access information from home rather than attend a class on campus. Faculty predicted that plagiarism would increase and create new challenges for the academy because of the easy access to global information.

That said, the faculty in this study continued to believe that all students should have Internet access. Technology enables users to access information by providing up-to-

date information into the classroom directly from the authors of current research. They summarized the influence of technology on access to information as promoting the ideal classroom by providing timely and accurate information.

The Classroom Based on the discussions with these faculty the influence of technology on the classroom was divided into four categories: (1) student-centered learning, (2) excitement with technology, (3) teaching collaboratively, and (4) the environment. Some of the faculty described the importance of a student-centered classroom with attention paid to student needs in the learning process. They voiced concerns that increased use of technology would create an artificial gulf between students and faculty. Others expressed excitement in regard to having the desired technology as part of their classroom. They talked of the opportunity to use technology to teach collaboratively with their academic colleagues. Faculty also discussed the actual classroom environment, expressing the importance of the human element, as well as the physical elements. They listed certain human elements (i.e., the teacher caring about the student learner) that needed to be maintained regardless of the technology used in the teaching and learning process. A majority of faculty in this study found comfort and an excellent classroom layout imperative to the teaching and learning process, and did not want technology to decrease the comfort level of their classroom.

Faculty maintained the importance of remaining student-centered while embracing technology. They viewed technology as an exciting opportunity to explore new teaching methodologies in their classrooms. They also addressed the need for teaching in collaboration with others, which may offer assistance during the transition of increased use of technology in their classrooms. Even with their expressed excitement with the new technology, these faculty members agreed that no amount of technology could ever take the place of human interaction in the education process.

Traditional Methods These metropolitan faculty members acknowledged various ways that technology influences traditional methods of instruction. They described teachers as being satisfied with the use of their current teaching methods and not willing to contribute time and energy to learning, or using, new high-tech teaching methods. Faculty went on to explain that teaching with new technology offers no guarantee that instruction would be better than the current methods of instruction. Some faculty viewed the influence of technology as "messing-up" the space reserved for traditional teaching methods and equipment. They also feared that technology would eliminate the need for the human teacher.

Faculty stated a need for having space left to teach "the old fashioned way." They believed that the lecture is an important method of instruction. Furthermore, they argued that this method of instruction could be enhanced, and an ideal classroom could be developed around this already tried and proven method, thus reducing the need for instructional technology. Many of the college teachers in this study believed technology should complement traditional methods of instruction and not attempt to replace those methods. In addition, they stressed that the influence of technology on traditional methods is not always successful and low-tech solutions to teaching problems should be identified first.

The faculty who participated in the study revealed that they were concerned with the educational return on the resources spent on technology investment, and with the real ability to use technology to accomplish the university's mission. They questioned the need for the use of expensive technology while, seemingly, educational funds continue to decrease and professors oppose the use of technology. They wondered if universities really need technology to improve the teaching and learning process. In other words, why should universities pay for more technology if the traditional methods of instruction accomplish the university's mission? According to faculty, it is important to maintain the mission as the driving force, and to use technology only if it will meet that mission.

Faculty elaborated on the influence of technology and its use in the traditional classroom, and proposed certain needs to make the transition possible. They considered the need for technical assistance in the ideal technology classroom as imperative. Faculty, demonstrating the individual learning needs of various departments, mentioned a wide variety of desired technological equipment. In the end, the faculty who participated in this study still wanted to use and have available for use the chalkboard and other traditional teaching equipment.

Theoretical Framework Parameter: Influences on Technology

In comparison with the framework core, the framework parameter reflects those constructs that summarize faculty attitudes about aspects of the technological structure and the process of education that will influence technology. These attitudes address a concern faculty have about the successful implementation of technology in the college classroom.

Structural Influences on Technology Training Faculty development and student training in technology were essential to faculty members because "understanding how to use [technology] is as important as availability." They saw a challenge in appropriate technology usage in the classroom. Workshops on the use of technology as a pedagogical tool were as necessary as adequate training and practice on the equipment. The faculty recommended the use of a faculty expert to assist them in learning new applications. One faculty member believed an in-class mentor could help to train new faculty members. There were anxieties expressed regarding time required for training, conversion of current teaching materials to another medium, and the burden of being expected to use the technology properly.

Student training was also imperative. Faculty members believed that students should have prior training before using technology in the classroom. They saw academic performance barriers for students who lacked basic typing skills, knowledge about word processing, and appropriate training in technological skills. One faculty member believed that "students should not be allowed to enter a program without the appropriate [computer skill] prerequisites being met."

Support The ideal technology classroom must have an adequate support infrastructure. A technical tutor for each instructor and a lab assistant for students would provide this support. Student mentors and tutors assisting students would assure proper use of the technology. A support infrastructure would provide students with the confidence they needed to succeed. The faculty in this study also expressed concerns about the ability of the university to stay current with the latest equipment and software, and to

keep the support infrastructure on the cutting-edge. As one professor declared," [The student's] degree will seem to be less valuable if the student's institution has failed to stay [current] with modern technology."

Faculty members wanted administrators to understand faculty fears of improper and ill-maintained equipment. As one instructor declared, "unreliable computers have a negative effect on students." Faculty needed assurances that universities would be prepared in the event of a "system crash," or that "back-up systems" would be in place for the quick repair of malfunctioning equipment. One faculty member warned administrators, "Don't assume that the technology will work without constant repairs". They also wanted a consideration of the "march of technology," and the awareness that equipment and software become quickly outdated. In other words, if this is to be the "ideal technological classroom," the faculty members would expect to have well maintained, up-to-date equipment with adequate technical support.

Educational Issues that Influence Technology

Teacher Control The faculty who participated in this study expressed several opinions about their desire to remain in constant control of their classroom, the teaching process, and student learning. Faculty assumed that these issues of control would have an influence on the successful use of technology in the classroom for the simple reason that faculty feared a loss of control due to the use of technology in the classroom.

Such issues of teacher control included class size, seating arrangement, student tardiness, and teacher control of instruction. According to the faculty, the ideal class size was 20 to 25 students with the teacher controlling the seating arrangement. The issue of tardiness was divided among the faculty. Some faculty so abhorred tardiness that they wished they could lock the classroom door to prevent tardy students from entering the classroom. Other faculty believed that college students were adults with hectic schedules and should be allowed some degree of flexibility or leniency for tardiness.

With regard to teacher control of instruction, faculty had visions of an ideal setting in which they could have"a master control panel at the instructor's disposal...that controls all equipment," a writing pad for "front screen display," and an instructor's computer linked to a LCD projector. It would be a place wherestudents were allowed access to the classroom, but only with appropriate monitoring. The instructor's office would be attached or adjacent to the classrooms. There would be an accurate clock on the wall, supplies, and non-textbook materials would be readily obtainable. In other words, a place where "the individual classrooms functioned on a 'stand-alone basis'–an island where everything you need to teach is available for your instructional requirements" — total teacher control.

The Ideal Classroom What do college teachers want in the ideal classroom? Apparently, they want comfortable "adult size" chairs with padded seats and space for students to "spread out their work and supplies," all accessible to the handicapped student. They want a pleasant atmosphere of plants, artwork, color other than "institutional gray or green," clean carpets, and windows for natural light. They want independent controls for heating and air, a dimmer switch for light control in the classroom, bookshelves, sinks (for those disciplines that require hand-washing after a class

project), and available space on walls for materials and student work. The faculty in this study discussed their desire for a comfortable classroom and shared the concern that a classroom designed for technology was not designed for comfort.

According to the teachers in this study, the ideal classroom must have a competent teacher characterized by integrity, knowledge, and creativity. Observation of student work, allowing time for active learning, and "in-depth coverage of the topic" was expected of the competent teacher. As stressed by faculty, comfort, resources, and an aesthetic environment are of little value unless teachers have knowledge of their subject matter and are "enthusiastic about learning the new technology." "Caring about the responsibilities of their students" was something faculty members felt "technology could not replace."

Student Learning Even though the faculty in this study talked of "teacher control" of the classroom, they still recognized the importance of the student in an environment conducive to learning. They stressed the importance of teaching strategies designed to accommodate diverse learning styles. They argued that students should "like what they learn" and how they learn. They emphasized that teachers must have "high expectations for student achievement." Finally, they talked of the importance of the physical surroundings in the classroom to ensuring a quality learning experience. They debated the ability of instructional technology to provide an environment that was as conducive to learning as the traditional method of instruction.

Faculty and Technology: A Discussion

Faculty attitudes about the use of technology in the college classroom are multifarious, multi-dimensional, and contradictory. For every positive attitude concerning the use of technology there appears to be a counter negative attitude against the use of technology. Participants in this study agree that technology has the power to empower students and faculty with a sense of accomplishment. Technology has the power to uplift users when their learning of technology is complete and successful. But, the use of technology is also intimidating, overwhelming, frightening to novice technologists and, even at times, to experts. Faculty share concerns that too much reliance on technology in the college classroom has the potential of casting a "dehumanizing" pall across a very human experience. Faculty members worry that technology in the classroom may create an artificial barrier between faculty and students. Some see technology as a boon to promoting teamwork among students. Others see technology as a bust in facilitating group work and student-to-student interaction.

Those faculty who view technology as a barrier to teamwork and interaction see technology more as a tool for information dissemination than as a networking tool. To these teachers, technology is just another method to give information to students instead of using the tool to encourage students to find the information on their own. While some faculty recognize the networking capability of technology in the classroom and other faculty members see technology as just another way to lecture, all faculty members in this study recognized the information access capability of technology. They recognized the value of the internet in providing information. Interestingly, however, even with global information at the touch of a finger, when faculty think of information they still think in terms of the printed page.

On the one hand, some faculty agree that instructional technology can, and will, reduce instructional planning time by providing teachers with more instructional strategies that engage students in active learning, therefore reducing the need for faculty to prepare lectures. When lecturing, technology in the classroom offers faculty an opportunity to put their lecture notes in multimedia format, such as PowerPoint, thereby reducing the time needed to develop, print, and copy overheads. On the other hand, faculty argued that technology in the classroom increases preparation time because novice faculty must spend time learning the new technology and converting their traditional instructional strategies to the new technology. In addition, even the technology experts among the faculty agree that they always prepare an instructional back up just in case the gates of hell are flung wide open, and catastrophe strikes the classroom in the form of crashing technology.

Does technology in the classroom really enhance learning, or are teachers and students so focused on learning, and using, the technology that the learning objectives for the course become secondary? Is the purchase of the latest and greatest technological advancement really necessary to promote the mission of the university,or can teachers and students accomplish that mission with the old, tried and true methods of teaching and learning? These are the questions that faculty ponder as they weigh the pros and cons of instructional technology. The answers to these questions provide faculty with the compass they will use to navigate the technological future.

Faculty members fear a constant drain on their time in staying current with the technological revolution. They worry that administration will throw them into a room full of all these gadgets without technical support, training, or the resources to keep the gadgets working. They worry that technology will interfere, rather than enhance, their ideal classroom, will interfere with their ideas concerning student learning, and will destroy their control over the entire educational process. Perhaps, more importantly, teachers are afraid of being replaced by the computer.

Conclusion

As metropolitan university leaders ponder the reasons why faculty members still seem reluctant to embrace the latest technology and use it in their college classroom, they can look to this theoretical framework for some answers. For many faculty the new box sitting on the table is just another tool to access and disseminate information. It is a complement to, rather than a replacement of, the traditional methods of instruction. The computer has not revolutionized the way college faculty members teach or the way college students learn, it has simply given teachers and students a new educational accessory. With that stated, this framework provides university leaders with clues as to why the box on the table has remained only an accessory located on the periphery of learning. While some faculty embrace technology with excitement, other faculty members look at the new technology with fear, intimidation, and confusion. The faculty who flee from technology do so not simply because they are reluctant to change or learn new methods of instruction, but because they still have doubts about the ability of the newest instructional gadget to actually improve learning, or enhance the accomplishment of the university mission, or save teachers and students time and effort, or strengthen the student-to-student or student-to-teacher bond, or facilitate teamwork, or improve instruction.

Faculty members have genuine concerns about the use of technology in the college

classroom. At most metropolitan universities across the country the latest technological advances have been provided for faculty and student use. Before students use technology in their learning process, teachers must incorporate technology in their teaching. Neither will happen until faculty attitudes about technology are identified, discussed, and addressed, whenever possible.

References

Cardenas, K., "Technology in Today's Classroom," *Academe* (May-June 1998): 27-29.

DeSieno, R., "The Faculty and Digital Technology," *Educom Review* 30:4 (1995): 46-48.

Lehman, D., "Barriers to Distance Education," (Paper presented at class). EDST885, [on-line] www.udel.edu.

Noblitt, J. S., "Scholarship, Publishing and Computing: Interactions in the Educational Marketplace," *IAT Briefings* 5:1& 2 (1998).

Rickard, W., "Technology, Education, and the Changing Nature of Resistance, *Educom Review* 34:1 (1999): 42-45.

Schofield, J.W., Computers and classroom culture. A review summary of the text by Teachers College Record (New York: Cambridge University Press, 1995).

U.S. Department of Education, Overview of Technology and Education Reform: Introduction to a Report on Nine Case Tudies for the U.S. Department of Education (Washington, D.C., 1999).

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