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ABSTRACT

This paper describes a preservice health education course for elementary educators that incorporated a technology component to help the students gain computer literacy. All students received instructional computer accounts and had access to a class bulletin board. One class session focused on learning the systems. Throughout the semester, students shared tips about computer networking. Their first assignment was to navigate Internet health and elementary education discussion groups, then e-mail the instructor about what they learned and how they perceived their experiences. The second assignment had students download health related lesson plans from the Internet. The third assignment had students post their own lesson plans on the Internet. The final assignment required posting three times (reacting to an assignment, replying to another student's post, and whatever else the student chose). The instructors considered the project beneficial, as the predominantly female students mastered technology and gained skills to help them narrow the gender gap. The course helped students develop or enhance their computer literacy and view a model of classroom technology use. Students and instructors used computers to access one another outside the classroom. The greatest benefit was the increased sharing among class members. (SM)

Incorporating a Technology Component Into Health Education Courses

A Paper Presented
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Introduction

Technology has the capability to promote an atmosphere in which students can be producers of knowledge while the teacher facilitates students' learning. Hadley (1996) stated, "technology can play an important role in re-structuring the learning environment..., especially if integrated into effective teaching and learning practices" (p. S-45). As might be expected, there is an explosion of interest and activity related to the use of technology in the preparation of teachers. It is this area, the preparation of elementary education majors and their use of technology, that we addressed in this piece. Specifically, we addressed the demographic characteristics of elementary education majors and the gender-related concerns of technology use before describing a course we taught. We included a description of the assignments we used in our classes to demonstrate ways students used technology, discussed the implications and limitations of these assignments, suggested how others can incorporate technology into their courses, and asserted the importance of training and technical support.

Students and professors in teacher preparation programs including health education can not avoid technology. The use of technology for teaching and learning has permeated the mainstream and is no longer limited to enthusiasts. Green's "Campus Computing" survey (cited in DeLoughry, 1996) found that almost 25% of classes were held in computer-equipped classrooms, and that 20% of the classes were using email, a 12 per cent increase from the previous year. Professors who initially used computers for word processing and record keeping now used email to create a virtual classroom by communicating with students and facilitating out-of-class discussions among students. This is encouraging news. However, since women make

up the largest proportion of undergraduates enrolled in teacher preparation programs, it bears closer analysis.

Gender-Related and Technical Training Issues

Traditionally, women were guided toward the liberal arts and social sciences and steered away from mathematics, engineering, and the physical sciences during their schooling. This subtle yet pervasive guidance continues to isolate women from technology as computer courses frequently are housed within the math curriculum (Sadker & Sadker, 1994). Girls and young women can continue their schooling with a learned helplessness regarding technology. In particular, women who pursue degrees in education often avoid technology in college because their majors require minimal, if any, computer literacy as a condition for graduation.

In the United States, half of the states have no requirements or recommendations for technology training of preservice teachers thus adding to the likelihood that those students will earn their degree yet be technologically illiterate (Scrogan, 1988). The Office of Technology Assessment (OTA), a support agency for Congress charged with helping Congress comprehend how technology affects education, studied current issues in educational technology for teachers K-12. They found that most teachers want to use technology but that most teachers are not using technology, computers in particular, in any creative or sophisticated manner (Fulton, 1993). The findings suggested that a maximum of 30% of practicing educators were comfortable using computers in their classrooms. Although a clear majority of teachers were interested in using technology, the fact remains that "new teachers coming fresh from schools and colleges of education weren't entering the classroom ready to teach

with technology" (Fulton, 1993, p.7). If technology is not integrated as part of preservice teachers' preparation, it probably will not be a part of their teaching in the schools.

As health educators, we face a double challenge. First, in a period of downsizing and increasing workload often masquerading as efficiency moves, we continually justify the need for and relevance of health education. Second, health-related sources of information and information itself expands exponentially making the use and understanding of technology essential. Both the Role Delineation Project and the subsequent creation of the Certified Health Education Specialist (CHES) certification demand these skills. While both the Role Delineation Project and CHES are well intentioned, they also represent a growing trend toward the instrumentalization of certain skills thereby emphasizing method at the expense of creative and critical thought. This increasing bureaucratization can serve to deskill teachers and other cultural workers and be a disincentive for learning, critical thought, and meaningful social action (Giroux, 1992; Aronowitz & Giroux, 1991). We are committed to helping preservice teachers examine the role of technology in their lives and the lives of their future students so that it can be used in productive and empowering ways. It is with this in mind that we offer our experiences as one example of a critical pedagogy (Giroux, 1992) of health education.

How We Incorporated Technology

As instructors responsible for this course, the tasks we believed the class community needed to achieve were many. They included exploring and establishing the need for health education throughout the K-12 school experience. This is

particularly salient with elementary education majors since our course was the only required course relating to health education and health issues they would take during their undergraduate education. Another task the class community needed to address was the development of a personal knowledge base of health-related information and skills. Additionally, rather than presenting various methods as though teaching were little more than following a recipe, we modeled a variety of pedagogical approaches and provided opportunities for students to practice and critique the strengths and weaknesses of each approach. Lastly, we believed that the class community had to be able to articulate an understanding of the social, cultural, economic, and political aspects of education in general and health education specifically. The use of technology was one way we hoped to be able to address these and other issues in our classroom. Haberman (1991) stated, that "whenever teachers involve students with the technology of information access, good teaching is going on" (p. 294). In what follows, we describe the various class assignments that used technology.

Using technology in a course requires advance preparation and planning by the instructor and at least minimal familiarity with the Internet. Instructional computer accounts were secured for all students enrolled in the class and a class bulletin board (CBB) was established. These accounts and the CBB were active only for the semester during which the class met, although students were entitled to a generic computer account throughout their enrollment at the university. We devoted one class meeting to an orientation session enlisting the aid of those in the class who were already familiar with the system as peer tutors. The students learned about logging on, reading mail, sending mail, creating nicknames for frequently used addresses, and

accessing the Internet. During the next few class sessions, we devoted the first five minutes to sharing tips about the computer network, troubleshooting, asking students to share their expertise with others in class, and answering questions. For example, instructors and other classmates helped familiarize students with various keyboard configurations, special function keys, short cuts, and multiple ways to do the same thing. Additional help sessions, outside of the regular class meeting time, were offered after the first assignment was posted but before it was due. Although the instructors facilitated the help sessions, they could be run by graduate students or service organizations on campus that have the computer skills. This would be an excellent service project for Health Education student organizations such as Eta Sigma Gamma.

Assignments Used

The first assignment was to navigate the Internet discussion groups (usually called newsgroups). Students were required to send email messages to the instructor describing what they found. Specifically, students were required to access the newsgroup K12.chat.elementary (a newsgroup where many elementary-age students are frequent contributors) and any other health-related newsgroup of their choice. The students were asked to send email to the instructor and describe what was discussed on K12.chat.elementary and the other newsgroup they chose. Also, we asked for comments regarding the use of the computer system in the email message. Several themes prevailed in students' comments about the Internet and the computer system. Most saw the value of the technology, believed that if children can use it

successfully so can they, and expressed frustration about their initial attempts to logon, find a newsgroup, or gruff computer attendants in the labs. The instructor replied to each student's account in order to confirm that the assignment was received.

In the second assignment, students had an opportunity to become familiar with using the "gopher"--another hierarchically-arranged platform with thousands of links to various sources of information. Specifically, students had to download and print a lesson plan from the AskERIC location on gopher. The plan had to be health related and specific to elementary-aged students. This was completed simultaneously with in-class instruction on lesson plans which included writing behavioral objectives. Students analyzed the plans, the objectives, and made corrections to objectives according to the format learned in class. Revised lesson plans from the AskERIC were handed in to receive credit. This assignment can also be used to analyze lesson planning and writing objectives as teacher processes.

Students were required to post their own lesson plans to the CBB for the third assignment. This allowed students to download and print any or all lesson plans developed by their classmates. Students were aware of this requirement prior to posting. This activity fosters collaboration among educators. Students wondered about plagiarism as they downloaded educators' work from the Internet or posted their original lesson plans to the CBB. This provided an opportunity to discuss the limits and importance of plagiarism as a real-life issue. Importantly, this assignment also acknowledged students as creators of knowledge and is evidence of an epistemic shift from teacher-produced knowledge to student-produced knowledge with student-to-student sharing.

The fourth and last assignment required students to post three times to the CBB. The previous semester's classes were encouraged to post to the CBB but participation was minimal. We found that most activity came from those students who were already familiar with the system when posting to the CBB was optional. Therefore, the requirement for students to make three posts to the CBB was included. The first posting was an original post reacting to an assigned reading, a class discussion, or other activity in class. The second post had to be a reply to one of their classmate's first posts. Using the reply command required students to master another component of the system and familiarize themselves with newsgroup protocol. The third post was open with each student deciding upon the nature of his or her post. It was suggested that students could post another original, a reply, or announce a campus-related event. Students had most of the semester to complete this component, but the deadline was two weeks before the last day of class decreasing the likelihood of a flurry of posts that no one would read.

Discussion and Conclusions

The incorporation of a technological component into an elementary health education methods class was beneficial for several reasons. The class was predominately female closely reflecting gender breakdown of elementary teachers nationwide and the ability to use technology can only help narrow the gender gap. Secondly, while the presence of technology in the schools continues to flourish, the training of teachers is dismal. The majority of states do not require technology programs of preservice teachers and less than one third of graduates of teacher institutions feel prepared to teach using computers (Scrogan, 1988). To counter this

trend, our course provided an opportunity for women to develop or enhance their computer literacy. The course modeled how technology can be used in the classroom. The electronic component of the course opened the doors to a virtual classroom and a virtual office. Students could access the instructors, and the instructors could access the students outside of class time and scheduled office hours. This was most beneficial around group presentation time as the instructors could address last minute dilemmas that confronted groups. Several students used email to communicate about a missed class, not so much to ask the typical "Did I miss anything?" but more so to let the instructors know why he or she would be missing (or missed) the class.

Certainly, there were and are limitations to the use of technology. Not all institutions will have the access we enjoyed at the university where this course was offered. This is changing, but for many access is still a major problem, particularly for students. It is also a possibility that the use of what seems to be an anonymous public forum could engender hateful or mean-spirited exchanges between students. We did not see this. We did address the issue of responsible use of the system while acknowledging that freedom of speech is both valued and protected.

While we acknowledge the limits of this information, we continue to use technology and expand the ways we use it in our courses. The greatest benefit was the increased sharing among all members of the class. Updating hardware is an important issue but we believe the need for training is greater so that educators can use the equipment that is available. Time and money for training is a key issue in the integration of technology into education. It is especially important in teacher-training programs. The opportunity for health education professionals exists to re-define the

profession by being ahead of the curve of technological innovation. The examples we presented here are just that, examples. If you can use them to improve your course, please do. However, the more important message is that it is up to us working together to develop health education strategies and to design courses that take advantage of the strengths and possibilities of technology and avoid the weaknesses and limitations.

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