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Older Student Perceptions of technology based learning assignments

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Abstract

Results of a survey of older students' perceptions of technology-based active and collaborative learning assignments are presented and discussed. The forty-six students surveyed were registered nurses enrolled in a transition to baccalaureate education course. Fewer than half of the students had computer experience prior to the course enrolment, and only two had electronic mail and World Wide Web skills. Overall, students reported a positive course experience. They also report that their learning was positively affected by the innovative course design and delivery. Most were apprehensive and frustrated initially, but changed their perceptions as the course progressed. Students strongly suggested a computer orientation course as part of the nursing curriculum.

Key Words: learning innovation, active learning, collaborative learning, technology-based learning, perceptions of learning.

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Introduction

Educational research and theory suggest that students learn better when they are actively engaged in their learning rather than passive recipients of information. Many institutions of higher education are responding to the shifting educational paradigm by encouraging innovation in educational strategies. Our own institution, The Pennsylvania State University, places a strong emphasis on active and collaborative learning, the use of technology to enhance learning, and the development of graduates with lifelong learning skills.

Use of technology in education may not be viewed as unusual or new to traditional-aged learners, the 18- to 20-year-olds. Because of their widespread exposure to technology at play (i.e., electronic games) and during their secondary education, these learners adapt readily to technology and active learning in the university setting. What is not as well known, however, is how older students perceive these technology-based active and collaborative learning assignments.

This paper reports the results of a survey of older student perceptions of technology-based active and collaborative learning assignments. The assignments are part of a transition course taken by registered nurses in a baccalaureate nursing degree program. There were five electronic assignments in the course. Two assignments featured World Wide Web searches for information related to the history of nursing and nursing education. One assignment was a collaborative presentation and analysis of an ethical dilemma in nursing practice. The other two assignments featured both individual and collaborative activities related to report and analysis of an unsatisfactory nursing practice situation, and of issues related to nursing as a profession. Details of the assignments are reported in an article in process, "Promoting Critical Thinking with Technology Based Assignments" (Mastrian & McGonigle, 1997).

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Review of Literature

Design of technology-based active and collaborative learning assignments is grounded in constructivist theory. Constructivism emphasizes the active building of knowledge (Von Glasersfeld, 1988) by encouraging the learner to be an active meaning maker and to solve problems (Glatthorn, 1994). The role of the teacher changes from "omniscient oracle" to that of a "nutritionist" providing a suitable environment for learning (Trotter, 1995).

Shapiro (1995, p. 68) suggests that a technology-enhanced learning environment "promotes high levels of interaction among students and faculty." For example, when electronic mail or conferencing software is used as the student response system, it allows all students to respond to questions and issues rather than hearing only the responses of a select few who voluntarily speak out in a traditional classroom setting. Also, access to computer labs outside the rigid class time frame allows for flexibility in student time for engaging in learning (Shapiro, 1995). This is especially advantageous for returning RN students who have competing work, family, and school roles to juggle. Students may "log on" when their personal schedules allow, and they may have time to reflect on and refine their comments before posting them to the electronic discussion. Students also have the opportunity to post questions to faculty as they occur, and not wait until class time or office hours. Obviously, these interactions may also be synchronous with geographically dispersed students and faculty participating in a real-time discussion.

One of the most important objectives in nursing education is the development of professionals with lifelong learning skills. Dunlap (1997) reviewed instructional methodologies and concluded that there are four instructional strategies important for building lifelong learning skills: (a) collaboration, (b) reflection, (c) student autonomy activities, and (d) intrinsically motivating activities. The keys to promoting lifelong learning are to get students excited about their learning, actively engage them in the learning process, and let them take ownership of the problem in a supportive environment (Dunlap 1997). Technology-based active and collaborative learning assignments lend themselves well to generating excitement, engaging students, and promoting ownership of problems in a supportive environment. The constant advances in health-care knowledge require that we develop students who take responsibility for

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learning and are not dependent on an expert to decide what they should know.

This paper describes student responses to an innovative learning environment. Are technology-based active and collaborative learning assignments engaging our students, exciting them about learning, and helping them to become lifelong learners?

Methodology

Students in two sections of the course were asked to volunteer to complete the survey. Although the surveys were completed and submitted via electronic mail, anonymity was protected by removal of student identifying information, and reporting of results as aggregate data. Students received five points toward the total points for the class by completing the survey. Return of the survey constituted consent to participate. Students who chose not to participate were given an alternative way to earn the points, and thus, were not penalized for non-participation.

The survey questions were as follows:

- In a short paragraph, describe your experience with the course.
- How have your feelings about the course changed since the introduction to the course requirements?
- How was your learning affected by the computer assisted instruction?
- What advantages do you see in electronic assignments?
- What disadvantages do you see in electronic assignments?
- If you could change one thing about the course, what would it be?

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Results

Respondents were registered nurse students ranging in age from 23 to 57. Forty-six students responded to the survey, a 98 percent response rate. Approximately 47.6 percent of students had only word processing computer experience, 52.3 percent reported little or no experience using a computer, and .09 percent had used electronic mail and the World Wide Web prior to course registration.

Students responded with 71 positive and 42 negative comments related to the overall course experience and their feelings toward the course. The most frequent positive comments were "enjoyable" (nine), "fun" (seven), "challenging" (six), "learned a great deal" (six), "positive" (five), "interesting" (five), and "beneficial" (four). Other positive comments included "worthwhile," "educational," "an adventure," "a unique classroom experience," and "opened a whole new world for me." Two students summarized their experience as follows: "It can't be this much fun-I feel like I should be working harder and not enjoying it." and "Thanks for reawakening the old joys of nursing for me."

The most frequent negative comment related to the overall experience was the early frustration (sixteen) with the use of the computer. Five students reported feeling overwhelmed; others said they felt apprehensive, terrified, baffled, or confused. All students reported that their feelings changed favorably over time. Two students said it best: "My feelings have gone from absolute terror to amazement and joy." and "This course has driven me crazy, caused me a few gray hairs, and been fun all at the same time."

Overall, students perceived that learning was positively affected by the computer-based assignments, with 41 positive comments and 13 negative comments. Fourteen students indicated that learning was enhanced, and three said they felt better able to see both sides of an issue. Others indicated that they were motivated, challenged, and surprised by the amount of learning that took place. Four indicated that they became obsessed with mastering the computer (e-mail and the World Wide Web), and two said they felt that the electronic assignments interfered with learning. Two students believed that learning was slowed at first until their computer skills improved. Four students commented that the lack of a paper copy of assignments scared them until they realized

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that they could print them.

Students identified 48 advantages and 32 disadvantages of the electronic assignments. The most common advantage identified was convenience (nineteen), because students could work at home or anytime during the week that the lab was open. Several students had home computer systems but did not know how to use e-mail or the World Wide Web. Three students purchased home systems during the course. Five students indicated that the assignments were easier to complete electronically. Three said the collaboration was a confidence builder, and three said they believed they were encouraged to think independently. Other advantages identified were self-pacing of assignments, self-motivation, increased interaction, and collaboration.

The two most frequent disadvantages cited were worry over whether messages sent had been received (eight) and group members' tardy contributions to collaborative work (eight). Five students perceived that interaction was impersonal, and two cited the lack of immediate feedback as a disadvantage. Other disadvantages were lack of typing skills (two), lack of a home system, and the need to print.

In response to the question about recommended change in the course, 28 students identified the need for a computer introduction course in the nursing curriculum. Ten students suggested extending lab hours to the weekends. Four respondents said students should be warned ahead of time what to expect in the course. Three suggested being allowed to form their own work groups, and three suggested more individual assignments. One student wanted a mechanism to "divorce" an ineffective group. Finally, several students wished for more control over faulty disks (three), overloaded computer networks and servers (four), power failures, and computer breakdowns.

Discussion and Conclusions

Results of the survey of student perceptions of technology-based active and collaborative learning assignments indicate a successful course experience. Students were actively engaged in their learning and were challenged by the course. Initial fears and frustrations were overcome and students believed that learning was enhanced. Several students wrote thank-you notes because they had learned about nursing and

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mastered technology all at the same time.

In summary, we recommend the use of technology-based active and collaborative learning assignments. However, we caution that professors need to be prepared for a challenge themselves. Introducing novices to technology and supporting them as they learn can be frustrating and labor-intensive initially. In addition, it is important to design the assignments so that the nursing content is not overtaken by the demands of technology. We built from a simple individual e-mail posting to the class, to collaborative discussions and group responses, and World Wide Web searches for information. We made certain that students used traditional library resources as well as electronic sources as they developed and supported their responses.

The students' voluntary responses describing their perceptions enhance the richness of the data while providing valuable information to guide future research initiatives. In order to develop an effective model for integrating active and collaborative learning into nursing education, further investigation is required. Studies must be designed to qualitatively and quantitatively explore learning outcomes of nursing students exposed to these integrative and interactive learning modalities. We are in the process of designing technology-based assignments to support concept mapping in the nursing research course and problem-based learning in the medical surgical nursing courses. In addition, we are designing research studies to assess student learning as a result of these innovations.

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