Internet-based Post Secondary Health Education Instruction

David Foulk, Ed.D.[1] ; Steven Dorman, Ph.D.[2]

[1] The Florida State University; [2] The University of Florida
Corresponding author: David Foulk, Department of Curriculum and Instruction, The Florida State University, Tallahassee, FL 32306; 850.644.6738 (phone), 850.644.1880 (fax), FOULK@MAIL.COE.FSU.EDU

Abstract

This paper is an overview of Internet-based post secondary health education instruction. It briefly examines the growth and functionality of distance learning on the Internet, development of an Internet based tool to deliver health education instruction in an asynchronous environment, and an explanation of how that tool functions. The focus of the explanation of how the tool functions also serves to inform us of the educational advantage of each site.

Introduction

The Internet has provided new opportunities for colleges and universities to reach greater numbers of students in diverse geographic environments with post secondary programs of higher education. The capacity of the Web to provide text, graphics, interactivity, video and audio creates an ideal format for expanding instruction in higher education (McManus, 1996). In addition, as HTML formats become more user friendly, updating and creating material for the Web becomes easier. The fact that instruction can be offered in an asynchronous environment opens doors to many non-traditional students and students in non-traditional environments. As colleges and universities attempt to reach constituencies in geographically diverse areas and as the numbers of students seeking higher education increases, then reliance on Internet based instruction will increase.

Currently, the amount of health instruction offered on the Internet is not substantial. This perhaps may be due to the lack of demand, but is probably more likely due to lack of technology skills and lack of comfort of health educators with designing and implementing Internet-based instruction. With efforts to enhance the influence of health education and the expanding need for continuing education created by the certification process, the need is great for technology-based health education programs in higher education.

Factors to consider

There are many approaches and factors to consider when offering Internet-based instruction. *The Office of Technology Assessment* (1988) has found that "just as there is no one best use of technology, there is no one best way of teaching with technology. Flexibility should be encouraged, allowing teachers to develop their personal teaching approach utilizing the variety of options offered by technology." (p. 17) . Successful Internet-based instruction, as in any distance education should focus on the instructional needs of the students rather than the technology itself (Sherry, 1996). In addition, the content requirements and technical constraints of the technology are critically important considerations.

Focused attention should be given to several design factors. For example, successful distance education approaches involve a high degree of interactivity between the instructor and the students. Interactivity can include a variety of features, however, students must feel connected with the instructor. Effective distance education should not leave the student as an independent and isolated learner, but should seek to involve the student in a variety of learning experiences. Thus, it is imperative that students receive immediate and continual feedback from the instructor.

Another design factor to consider is the degree to which the learner can be involved in affecting the learning goals of the course. Savery and Duffy (1995) found learners must have a sense of ownership of their learning goals for instruction to be successful. Hence, in order to be effective, distance education programs must seek to involve the learner in an active learning process. This might include providing a range of learning activities and options with which to engage the individual students.

Advantages and Disadvantages of Internet-based Instruction

Delivery of education via the Internet provides benefits and limitations to the student and the educational institution (Quintana, 1996). Benefits for students include the flexibility to pursue education at personally convenient times and progression in the course material at an individual pace. Additionally, in most cases, there is a reduction of travel costs to attend on-campus lectures (Jafari, 1997). For many self supporting students the prospect of continuing their education is based on their ability to earn enough money to live and pay the cost of tuition, fees and

books. Many students interested in graduate degrees are employed and want to improve their skills or economic position by obtaining graduate degrees. These non-traditional working students may continue to work and be less concerned about a more rigid class schedule. In asynchronous courses, students have the option to read and respond to class assignments when they choose to do so. The ability to interact with classmates in different locations using real time text and audio opens one up to a wider range of opinions and views shared in class discussions (Kubala, 1998).

This is not to say limitations of Internet-based courses for the student do not exist. Importantly at the present time it appears that not all students are suited for Internet-based education. Students may find difficulty expressing themselves using the computer-based communication methods as compared to direct conversation with their professor or in classroom discussions. The cost of computer equipment and infrastructure may limit the number of students that can afford Internet-based instruction (Jafari, 1997). Lack of technical support for software tools needed in Internet based instruction, may leave students discouraged and unable to participate. This lack of motivation can lead students to drop out quicker than in other types of instruction. However, as computer-assisted instructional activities expand in the K-12 sector and the price of computers and peripherals decrease, one should assume an increasingly technologically literate populace. Similarly, as education and the private market continues to improve instruction and availability, a decrease in concerns related to Internet access may result (Qunitana, 1996).

There are benefits and limitations of Internet-based courses to the institution and instructor (Qunitana, 1996). Benefits include: lower costs in electronic publication and quicker methods for electronically revising course materials compared to print materials (Jafari, 1997). In addition faculty enjoy flexibility in determining the time they will work on a course. Automated online registration and billing facilitates the larger number of students who can take courses. The institution is not limited to a geographical region yielding new potential source of new revenues for the school. Student evaluations and quizzes can be graded and scored online in an interactive fashion.

Educational institutions and post secondary instructors may resist Internet-based instruction due to other concerns. Specifically the cost of setting up computer equipment and providing technical support for Internet instruction may be prohibitive (Jafari, 1997). Professors must make a personal commitment to learn new methods and procedures that will be effective in this form of instruction. Many educational institutions have not offered sufficient incentives for instructors to learn and use new technology (Kubala, 1998). Instructors may not feel comfortable with technology and resist use of new instructional methods. Finally, unreliable equipment can cause problems in delivery of courses over the Internet yielding a lack of confidence on the part of the instructor and the student in this form of instruction (Quintana, 1996).

A Case Study in Developing Health-Related Courses Online

The Florida State University College of Education, Department of Curriculum and Instruction has developed an Internet tool for delivery of graduate education in health science. Efforts center around graduate courses already offered on campus rather than developing courses specifically for distance delivery. Off campus learners have similar learning needs as those on campus, however the challenge is largely to determine the best way to make learning opportunities available to students who can not come to campus. While there has been significant interest in distance education there has been less excitement for evaluating the strengths and weaknesses of various delivery modalities and no consensus has yet been reached regarding what form best fits unique campus considerations.

Thus, for our immediate purposes, delivery is not based on synchronous delivery. In fact, asynchronous modes facilitator learning for many students who may be reluctant to participate in a more traditional face-to-face environment.

Instructors in Science Education, Math Education and Health Education in FSU's College of Education became interested in teaching classes through technology. We began the use of electronic technology to deliver instruction by using email as the primary means of communication with our students. Course assignments were communicated, students directed to materials, questions were answered and class assignments made through email. While this was an important first step it was one way communication and did not allow for group learning or participation. Over time, a web site was developed to augment the email system used for course delivery. This allowed material

to be posted to the web where it would remain available to students 24 hours a day every day. Students could access assignments, syllabi, or readings at their convenience. As the web site became more effective, email was used as a communication enhancement rather than the primary mode of delivery.

Ken Tobin in Science Education and David Foulk in Health Education began to explore the feasibility of delivery of an entire degree program via distance learning. Dr. Tobin's idea of asynchronous learning environments that facilitated collaborative learning and allowed teachers to become researchers in their own classrooms without leaving home became the catalyst for the development of an entirely new tool. Once the vision for this tool began to take shape we discussed a partnership with the Miami Dade County School Board and the United Teachers of Dade. We agreed to train a cohort of 250 masters degree students in Elementary Math and Science Education using the World Wide Web as a means of delivery. Buried in the Science Education degree were courses in Health Education. Now that we had an agreement to move forward we needed to complete development of the tool.

Development of the FSU Tool

Developmental efforts continued in distance education on multiple fronts simultaneously. Faculty members involved in development of this project decided to focus developmental efforts on three major issues. First, the infrastructure of technology to support distance education had to be made secure. This measure was of course aimed at protecting the privacy of students engaged in this learning environment. A second issue included developing a tool for the interactive delivery of instruction. The tool had to be functional, easily navigated by students and flexible enough to allow instructors to facilitate learning and administer the necessary functions of the course. Third, faculty had to be offered professional development opportunities to upgrade their technology skills to deliver instruction. This aspect was continuous and multiple outlets were made available. An effective tactic was to involve faculty in the development of various functions of the Internet-based tool thus facilitating simultaneous development of their technology skills and a sense of ownership of the end product.

Advantages to Faculty and Students

For many faculty members, the flexibility of time needed to carry out this type of instruction is very appealing. Although the amount of work was considerable, the instructor has the option of doing the job at any chosen time of day. There is also the option to continue the course while out of town with no change in the student-instructor interaction. Since the Internet was the site where the education takes place, instructors interacted with students anywhere and at anytime Internet access was available. Over time, as the faculty became accustomed to the features and functionality of the new instructional modes, time spent on the Internet-based courses decreased dramatically.

There were, of course, negatives associated with this type of learning environment. An early criticism that faculty offered about this type of instruction was that they needed to commit long periods of time to keep up with students. Many students who would not have typically asked questions in a traditional lecture felt comfortable to query the instructor online. The result was a greater communication requiring individual on-line responses from the professor. Faculty report that the time required to deliver Internet-based instruction to 25 students for a three hour course was much greater than the time required to deliver the course to 40 students in a face-to-face mode. This creates issues of workload and faculty assignments that are beginning to surface in formal ways with bodies like the Faculty Welfare Committee.

Benefits of Using Web Sites for Distance Learning

Initially, there were difficulties related to technological competence on the part of students that had to be overcome. It was difficult for students to learn to use the technology while at the same time learning the substantive content of the course. In a distance learning project we did in Miami many students listed "learning how to use the technology" as one of their most important goals for the class when it was offered the first time. Therefore, pre-course support for learning to use technology was made available to students. In addition, the tool has been designed to be more student friendly and less threatening.

The following list of goals guided development of the web site distance learning tool:

1. Provide students with autonomy to access education on their time.
2. Provide options for highly interactive learning environments as well as environments that were less interactive.
3. Allow public and private interactions between faculty and students.
4. Allow convenient access to educational resources.
5. Limit the inconvenience of email account clutter.

STUDENT PAGES

A student-based site has been developed that has the following learning components:

1. Course details

At this site the instructor posts information about the class and how it will be conducted, including a course syllabus.

2. Library

The first function of the library is to provide a repository for papers (either pre-published or with permission). At first, the papers were to support specific courses and were limited in scope. Over time this collection has grown so that holdings are now categorized to allow students from a diverse set of courses access to the materials. Second, the library contains a reference list of articles to be accessed to support learning -- an annotated bibliography function. Connections to the search engines for available campus libraries and statewide library systems in Florida along with hot-links to appropriate sites have been added.

3. E-mail room

The e-mail function allows for ease of communication between students in a single class or with students in any of the other classes involved in distance education. This enlarges the community of learners and allowed for communication either individually or to groups of students.

4. Notice board

In this component, students can address any topic they choose. The topics do not have to be related to the course, or formal and do not have to be edited. There is no censorship of this site and no instructor interaction. The board is limited only in that posts are not to exceed 300 words. Notices are cleared periodically to make room for new postings and stored in the library for continued reference. The notice board creates an environment that facilitates communication between students.

5. Dialogue journal

The focus of dialogue groups is on the research. The students communicate what they are learning, problems they encounter, and perspectives they bring to bear to their experiences. Dialogue groups consist of groups of 2-4 students who communicate electronically several times each week in an interactive and informal manner. The semi-private nature of exchange allows the instructor to have access to the dialogue groups and at times join in the conversations.

Accordingly dialogue groups serve the function of providing support and an opportunity to try out ideas in a low risk environment. The dialogue groups are educative in that each member of a group is a teacher and a learner and there are places where alternative perspectives can be introduced and tried out. Because of the longitudinal nature of the dialogue journals, this is one place where all participants can look back at their changing points of view over time and show convincingly that they are learning from their research. In addition, the dialogue journals are a place for participants to teach one another and thereby serve a broader educative function as a catalyst for change.

6. Critical Reviews

This site provides a forum for conversations centered around scholarly reading. Discussions about foundational readings are facilitated using a site that enabled students to post thoughtful and formal comments regarding chapters of texts and other resources used in support of a course. The discussion is typically focused on student interpretations of reading assignments. All students prepare a critical review of a given resource and post it on a bulletin board assigned for that purpose.

Each student has a file assigned for each chapter or reading. This discourse is not interactive, it is carefully prepared and edited before posting and each participant posts only once per chapter or reading. These postings are concise and focused on an issue associated with the resource being critically reviewed. As it is posted, the text is dated and time stamped and identifying information of the author is provided. The critical reviews for each chapter of a text, therefore, are contained in one site on the web and automatically transferred to each individual student's work file. This work file is visible only to the student and the instructor. The critical review site is open for anyone to read and learn from but only identified participants

are able to contribute to the site and those participants do not have editing privileges after the text is posted.

7. Conference Rooms

Conference rooms are set up to give the feeling of a professional meeting. The conference room has one student assigned the role of convener of the conference, one student serves as the recorder for the conference, there are presenters to the conference and participants in the conference.

The convener is required to make an introductory presentation on a given topic. The introduction is thematic and addressed some of the major trends in the research relating to the topic and identified key scholars in the field. Once this is done the convener shifts the focus to a discussion on how to adequately deal with major issues. The reviews are public and the foci for critical dialogues between students. Limiting the number of postings on a given topic to one per student and restricting the length of the post to 300-500 words promotes critical thinking and identification of the most salient issues. The critical reviews are posted automatically to the student's portfolio where each contribution can be self assessed and graded by peers and the instructor. The critical reviews section are public, and hence tangible sign of the emergence of a critical discourse within a learning community.

The presenters contribute to the conference after it has been introduced by the convener. Each presenter selects a topic that is related to the conference theme and contributes a polished presentation of 300 to 500 words. Formal presenters are expected to prepare a scholarly presentation grounded in research and theory. The presentations are intended to enhance learning of all students and are coordinated so as to minimize redundancy and to cover the scope of the topic of the conference.

The participants are class members who read over the presentations and ask questions, provide comments on what transpires, seek clarification on specific issues or request elaboration and justification. Participants entries are limited to 150 words so that a single participant can not dominate the discourse in a conference. Each conference has a coordinator assigned to assure ongoing dialogue. The interaction in this site is very formal in order to resemble the conduct of a professional meeting. The postings are to be polished and ready for consumption when pasted to the conference.

The recorder has the task of reviewing and assembling the different presentations into a 500 word synthesis concluding the conference. The synthesis includes texts from the convener, presenters, and participants as well as selected material from the published literature. The syntheses are pasted into the conference room, to be archived later in the library with all other contributions.

8. Voice Mail

Voice mail functionality gives instructors the ability to leave voice mail in AIFF files for their students. Messages are typically 3-5 minutes in duration.

9. Chatroom

The development of the chatroom (synchronous participation), a site for small group communication, allows for discussion of issues with a variety of purposes and agendas and at a very informal level of communication. Individuals can arrange meetings in the chatrooms at predetermined times or choose to participate in a discussion in an unplanned, spur-of-the-moment fashion. Rooms and tables can be reserved and the conversations be public or private. Due to the private conversations in the chatrooms, they are not saved or archived.

Conclusion

Increasingly, we have seen the rise of institutions existing solely on the Web that offer degrees or professional development through the Internet. Examples of Web Universities are: Open University, Virtual Online University, Mind Extension University, and the University of Paisley. Other institutions with major components of electronic degrees are: Athena University, University of Phoenix, Duke University, and The Florida State University. In health education there is a relatively low frequency of use of the electronic medium for instruction. A search for health education delivered through Internet and Web based delivery showed few and varied efforts. The World Lecture Hall (WLH) (**http://www.utexas.edu/world/lecture/index.html**) contains links to pages created by faculty worldwide who are using the Web to deliver class materials. A search of syllabi and course inventories at this site revealed no health education listings. Additionally, a search for the topic "health" or "health education" under education general did not reveal any listings. New York University recently launched a web site centered on substance abuse that lists two health

education courses but this appears to be the only Internet-based health education being done at that institution. There are health education courses scattered on web-sites of institutions such as The Florida State University, Indiana University, and others, but these listings are limited and diffuse. Given the intense study of the Internet as a means of delivery of instruction among higher education institutions, it is imperative that health educators explore the potential this medium offers. Carefully weighing the educational advantages against disadvantages of the Internet as a delivery medium requires an in-depth understanding of its nature and continued research.

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