
The Reality of Designing and Implementing an Internet-based Course

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Abstract

With more students working while attending college and many professionals pursuing a second degree, everyone is taking advantage of Internet learning. With the flexibility and convenience that this educational format provides, this new wave of learning is catching on across the country. However, before jumping into such a venture, faculty as well as students should be aware of what to expect. This paper presents the qualitative and quantitative data collected from the professor and students involved in two upper division undergraduate public health courses and highlights the points deemed important when designing, implementing and facilitating an Internet education course.

Introduction

Internet learning is a growing trend in today's educational system. About two-thirds of the accredited four-year colleges and graduate schools in the US compliment their campus class offerings with classes via the Internet (Clarke, 1999). For some students, taking an on-line course is merely a way to supplement their traditional on campus learning experience, while for others it's a welcomed alternative to the classroom setting.

Web-based learning offers many advantages to those seeking to advance their education. According to Mather (1998), electronic learning brings education to the living room where everyone in the family can participate, rather than keeping it in the classroom where only students and their peers take part. With the classroom at their disposal 24 hours a day, the flexibility of on-line courses allows students to set their own hours and work at a pace that is comfortable for them, going as fast or slow as they need. In addition to flexibility, web-based learning allows students to have more control over their learning experience. Unlike the conventional classroom, the instructor does not monopolize the attention in an on-line environment (Clarke, 1999; Trinkle, 1999). Consequently, distance education can be more stimulating and encourage more critical reasoning than the traditional lecture class because it allows the kind of interaction that takes place most fully in small group settings. Some students who take on-line courses actually find that they are drawn into the subject matter more deeply than in a traditional course because of the on-line discussions (Trinkle). Nevertheless, students

partaking in this method of learning should be highly motivated self-starters, and must be careful to not fall behind by letting real life responsibilities take priority.

For others, Internet technology can be frightening. To calm the fears of many anxious students, the instructor plays a vital role of serving as both a mentor and humanizer. As a mentor, the instructor acts as a resource, directing students to solutions by providing insight on where to go, who to contact and how to solve problems in general (Pritchard, 1998). By drawing out personal commitment, participant interaction, and enthusiasm, the instructor is seen as a humanizer working to personalize what is often feared to be an impersonal experience.

Many of the instructor-led Internet classes rely heavily on the email and chat room systems. With the absence of a classroom to serve as a meeting place, numerous students fear being lost in cyberspace without the guidance of a warm body. To promote a sense of connection, chat rooms are used to encourage social interaction between the participants while electronic mail enhances the learning experience by building on the learner-instructor relationship. Class participants are more likely to respond to a responsive instructor, thus through timely responses, carefully tailored feedback, and educational sagacity, on-line instructors can be just as effective as classroom teachers (Pritchard).

This article presents the experiences of being involved in an on-line learning format from both the teacher and learner perspective. Two upper division undergraduate courses were developed using one of the on-line course commercial software packages. Enrolled students purchased two textbooks per course, read weekly textbook assignments, reviewed the weekly course modules including the Microsoft PowerPoint® and hyperlinked material, and completed the corresponding assignments. All assignments and correspondence were sent to the instructor via the course email account. Students were discouraged from sending email to the instructor's university account. This request kept the course emails from getting mixed in with the daily email thus increasing the chance of the email being deleted by mistake. In addition, students were required to take timed on-line quizzes that were linked to the weekly modules. The software allowed the computer to grade and post the scores instantly upon completion of each quiz.

Methods

Since the instructor had taught both courses in the classroom for several semesters, only one semester was spent transforming the courses into a format for Internet access. Each course consists of 15 modules to correspond to the typical 15-week semester. Each module was pilot tested by several undergraduate and graduate students to ensure the connectivity of the hyperlinks, appropriateness of the assignments, and accessibility of the Microsoft PowerPoint® slides and on-line quizzes. The course is password protected, so only registered students have access to the course materials, Microsoft PowerPoint® slides and on-line quizzes.

The number of students enrolled in the two courses was 34 and 53, respectively. Throughout the duration of the 15-week course, the students sent many emails that were not a part of their assignments. The instructor responded to each email and printed out a copy for the accumulation of qualitative data. The data received from both courses was combined and is presented cumulatively.

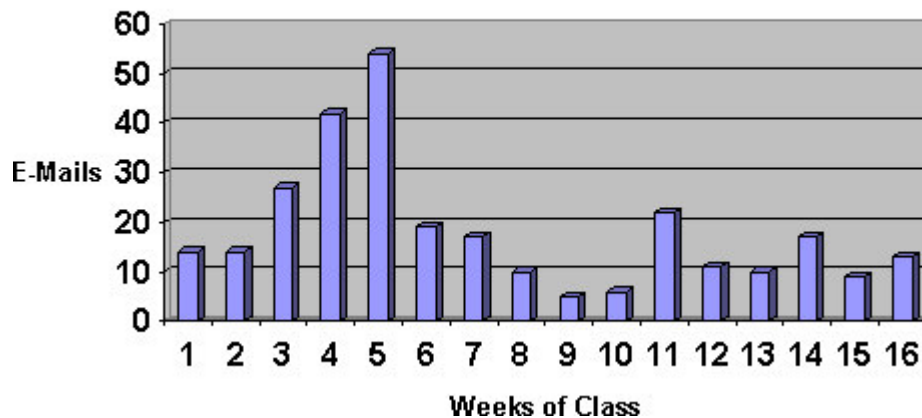
Results

The instructor analyzed the qualitative data collected from the student emails and developed some common themes which included accessibility to the course, the Microsoft PowerPoint® slides, quizzes, grades, verification that assignments were received, chat rooms versus bulletin

boards, and general feedback about the course. As illustrated in Graph 1, there were a combined total of 290 non-assignment emails received throughout the semester from both courses. The instructor did not record the number of phone calls and office visits from students, but it was less than the total number of emails. As noted in Graph 1, the number of emails peaked during week 3 and 4 of the semester. The instructor assumes that during the first few weeks, the students were concentrating on their other courses or trying to figure out the on-line course without asking questions. Once the students' level of frustration peaked, they began to contact the instructor for assistance and information.

Graph 1 takes into account the week of spring break, during which time students continued to access the site for both courses, hence giving the appearance of a 16 week semester.

Graph 1. Non-assignment emails received from students



Accessibility to the course

At the beginning of the semester, the students quickly fell into two categories. Those who were comfortable with their advanced computer skills and the Internet, and the students who lacked the sufficient computer skills and in some situations the necessary software required for the course.

"I am feeling a sense of discouragement. The entire process has gone completely over my head. I don't understand this concept but am anxiously willing to learn. This is the first time I've taken an Internet course and it's all new territory to me".

However, by the end of the course, this same student wrote the following:

"This course is great. I really like it...I have now gotten familiarized with the process and technology, and I don't have any problems with it. Having the professor so supportive and available during the learning process really helped me a lot".

Although the students with limited computer skills struggle in the beginning, if the instructor provides ample amounts of one-on-one time by phone or in person and easy-to-read, high quality instructions, the technology becomes secondary to course content.

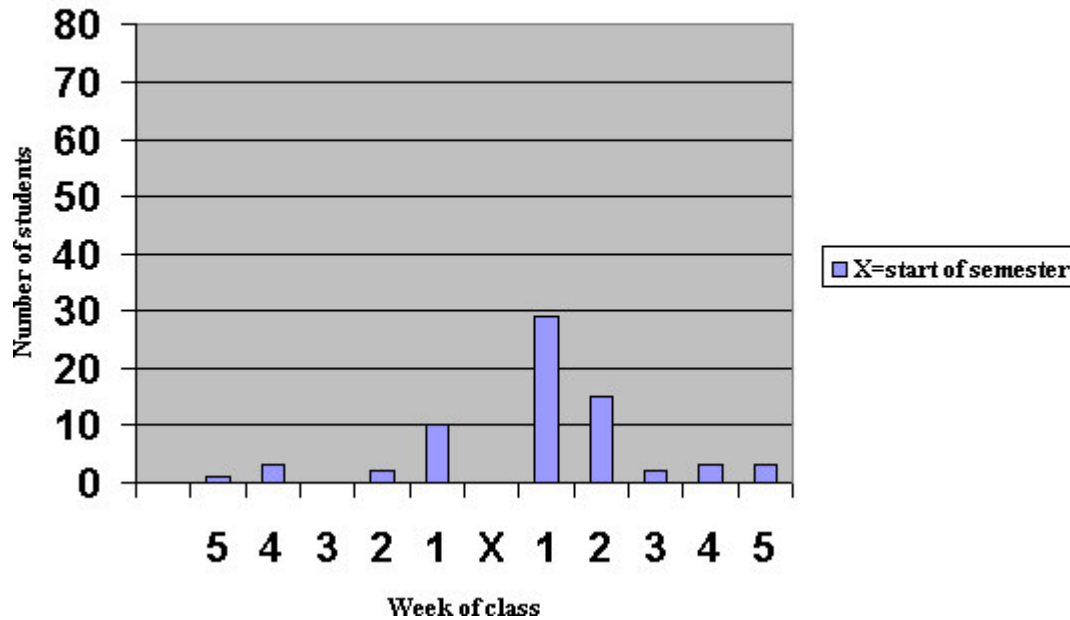
While some students were veterans to the technology, other students enrolled in the two above-mentioned classes stated that this was their first time taking an Internet course, and they

were a little confused about how to proceed.

"I've just signed up for HSC 4554 and I'm not sure what to do now!"

It is interesting to note that some students were eager to get started and began logging into and navigating the course site as early as 5 weeks prior to the start of the semester (Graph 2).

Graph 2. First Access of Students to Both Courses Combined



Accessibility to the Microsoft PowerPoint® slides

The same students who struggled accessing the course were once again frustrated by their failed attempts to access the Microsoft PowerPoint® slides. They were unaware that the Microsoft PowerPoint® software had to be installed on their computer prior to attempting to open the slides. It was their assumption that the Internet made the software available for use during the course.

Since the students preferred to download and print the slides rather than view their computer monitor while following along in the textbook, the instructor was concerned about use of the slides and course materials elsewhere. After some discussions with other faculty and the technological support team, the instructor assumed that the information was of little value to the students outside of the course. Although there is no way to copyright the slides, the instructor realized that giving out printed copies of the slides in class posed the same situation. As time permits, a footer is being added to each slide which states that permission to copy must be obtained from the instructor in hopes of deterring a few violations.

Accessibility to the quizzes

Even though the course was password protected and the weekly quizzes were presented in an open-book and multiple choice format, the instructor became aware that a few students were using their browser's print option and circulating the quizzes among prospective or currently

enrolled students in the class. This availability allowed for ease of cheating and eliminated the ability to reuse the questions in the future. To address this concern, students were blocked from viewing their quizzes after they submitted their responses for grading. Since the quizzes are timed by the computer, it is assumed that the students do not want to waste time blocking and printing when they only have one opportunity to take the quiz in the allotted time period. The downside to blocking the students ability to see their responses along side the correct responses is that it eliminates the instant learning opportunity. To correct for this flaw, the students are invited to make an appointment with the instructor to view their individual quizzes. Out of state students are emailed the questions and answers that they missed in hopes that they are not as connected with the possible on-campus "test sharing" scheme.

Accessibility to grades

Since the computer graded the quizzes and posted the grades, the only grades that were posted by hand were the emailed assignments. Since the instructor's graduate student posted grades twice per week, the students became anxious about how they were performing in the course. They frequently checked the website for updates on grades and questioned missing grades.

"I like to check my progress to know where I stand and where I need to improve."

Verification that assignments were received

The students shared the attitude that it was their responsibility to make it known that they were meeting all of the requirements as well as to ensure that they received proper credit for their completed work. Since many of the students were unfamiliar with the concept of email attachments, the instructor verified the receipt of each emailed assignment. This extra effort assured the students that their contributions to the course were not overlooked and that they were being appropriately acknowledged for their efforts.

Chat Rooms versus Bulletin Boards

In both courses, the instructor started the semester using a chat room format for class participation. However, there were some common concerns among the students in regard to this format. First, the major advantage of Internet courses is that students can access the course at a time and location convenient to them. Since the chat room format is set-up for real time interaction, it was not possible for the students to read and comment on what other students had written unless they were logged in at the same time. Second, it was not possible for the students to retrieve and review their entries once the chat room was exited. Although the instructor could verify their postings and comments, the students were not comfortable with the uncertainty.

"The chat rooms don't let you see other people's entries unless they are logged on at the same time. There is no way to retrieve and look at what you have entered if you return to the chat".

Therefore, to eliminate the concerns, the chat room was replaced with the bulletin board format. This new design allowed the students to read everyone else's comments and view all of what they had posted instead of only per line as in the chat room format. This switch to bulletin boards enhanced communication, because for this type of course, it is unlikely that the students would be available for a real time online chat.

General feedback about the course

Overall, students seemed to enjoy the courses and appreciate the flexibility and self-paced format, as shown in Table 1.

Table 1. Advantages and disadvantages of the on-line course format

Advantages	Disadvantages
The flexibility	Amount of self discipline required
Great option for people who have so little time, and limited time to put into a course	Lack of interaction and discussion with other students. Although email and discussion boards are available, interaction is limited
Accessible 24 hours	Technology mishaps
Students can communicate with professor directly (often feel uncomfortable with asking questions in front of a class, which isn't a problem in online courses)	Can't compare expectations and progress with other students
Set own pace (no set schedule)	Material needs to be understandable, without a great deal of explanation from the instructor
Instant feedback on quizzes	No direct face-to-face contact with the students
Saves transportation and time	

One student recommended that more learning take place in this format.

"I am having fun. More learning should take place in this format...As a single mom with two energetic daughters, the less time I have to spend commuting to class and sitting through lectures, the better".

Another student found it interesting to be able to choose the order in which to complete the modules, and found herself adjusting the Survey of Human Disease course to her life experiences. Being a smoker and with the recent loss of a loved one, she found herself drawn towards the chapters on smoking and dealing with death and dying, and thus completed those assignments first.

"Well because I smoke I read that chapter...and my grandma just died of cancer and the chapter on death and dying was almost identical to the hospice book".

Additional students noted that they were very pleased with the depth of the course. This demonstrates the ability of an Internet course to be as intense and thought provoking as the traditional classroom course, as well as its capacity to stimulate as much interest. However some did state that an introductory session to review the format and familiarize the students with the process would have been helpful.

Conclusion

Computer technology is a growing trend, and with it comes the upsurge of electronic learning. On-line learning brings to the domain of education what telephones brought to the area of communication. It has opened up a new way to connect with students of all ages and in all places with added convenience and flexibility. Although there are many advantages for the students to participate in Internet courses, frequently they experience some frustration with the technology and a sense of loneliness that results in lack of motivation due to the loss of personal interaction with the instructor and their fellow students.

For the instructor, teaching online courses require more time, patience and understanding than a traditional course. No longer is it sufficient to only have in-depth knowledge of the course content, but the instructor must have a thorough understanding of the technology. Without advanced technological knowledge, the instructor will be dependent on a computer technician to answer the simple student questions about accessing a portion of the course or making changes to the course design. With this new Internet technology, instructors are expected to teach in a format that they have never learned. Therefore, this type of learning can be both intriguing and frightening for the students as well as the instructors.

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