

Issues in Internet Based Education

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Abstract

With technology advancements and the use of the Internet, many opportunities exist to enhance the way education is delivered. This paper addresses the issues that an institution will face considering the Internet as an educational delivery method. Our discussion includes the pedagogical issues, student resource concerns, technical hurdles, and political obstacles. We also make suggestions overcoming some of these issues in order to implement and succeed in Internet based education.

Keywords: Internet Education, Web based Education, Online Education, Online Distance Learning Programs, and E-learning.

INTRODUCTION

The wide spread use and availability of the Internet has changed the way education is delivered. Educational institutions can no longer ignore the impact of the Internet as a delivery medium of distance learning courses. Many students are seeking an educational institution that can provide a convenient delivery method to meet their educational goals. For distance learning students, the availability of an Internet connection allows for convenience and perhaps the only way to get higher education. Because of this, the number of institutions using the Internet in their distance education is increasing.

The Internet has raised many issues and challenges for educational institutions when deciding whether to chose the Internet as a delivery method for their courses. Institutions have to be careful not to get caught in the trap of "follow the leader" without carefully understanding of these issues and challenges of Internet based education. This paper discusses various issues that arise when considering Internet based courses and proposes guidelines to overcome them.

REASONS FOR WEB BASED EDUCATION

Traditional attitudes in an academic setting have been to build the program and the students will come. Few

institutions have focused on the students' expectations, and needs (Phillips and Peters 1999). However, with the recent explosion of distance learning programs, the education game is changing. In graduate courses alone, it is predicted that there are more than 2 million individuals completing courses through distance learning (Kleiner 2000). Today, in the U.S., there are more that 40 fully accredited distance learning MBA programs. This number is expected to continually increase as the market needs increase (Fornaciari and Forte 1999).

The explosion of the Internet age offers a new and more attractive medium to reach a new market of students and educators often feel compelled to tackle Web-based instruction. Institutions are also feeling the need to meet the demand of the market for fear of being surpassed by competing institutions (Phillips and Peters, 1999). It is evident that those institutions not willing to change as communication technologies advance will be out of the educational game altogether (Leonard 1999).

ISSUES IN INTERNET BASED EDUCATION

We now turn our attention to various issues facing Internet based education and the difficulties an academic institution may face in initiating and using Internet based educational programs.

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Pedagogical Issues

Instructors and institutions struggle over the appropriate pedagogy to use with a web-based course. Some questions requiring answers to judge the appropriateness of pedagogy from an internet perspective are; Does the pedagogy encourage interaction between the students and instructor? Does it promote active learning techniques? Does it allow for prompt feedback? Does it encourage the learners? Does it allow for team cooperation among students?

Student Resource Concerns

Because of the distance learning “outbreak” the graduate student is often older (Kleiner 2000). For a 35-year-old who may have a family along with a career, it is hard to make time for in-class and out of class work. Distance learning has made it possible for such a student to enroll in higher education courses and without placing unrealistic demands on his/her time. But institutions should be cautious in the pursuit of these students. They are more demanding of adequate student services than on-campus students. They do not have the time or patience to spend even five minutes on hold during a call to the Bursar’s office. They want the information at their fingertips, accurate and fast (Kleiner 2000). The institution that can give them the education they need to meet their goals, along with the service they demand, will be the institution they choose. Services such as library access, advising, career counseling, financial aid information, registering, textbook/course materials ordering, and technical information should all be made easily accessible for an on-line distance learning student. In this context the following are only a few of the questions requiring answers: who will supervise or administer these services? And how can they be provided? All the on-line services mentioned above become issues that must be addressed prior to launching into Internet based courses.

Technical Hurdles

While faculty members in academic institutions are becoming more technologically oriented, they still do not fully comprehend the technical hurdles involved in implementing and using an Internet based educational program. In this section, we discuss some of these difficulties.

Hardware and Software Issues: Along with the services mentioned above, students must be made aware of the necessary hardware and software before enrolling in a Web-based course to ensure they have the appropriate equipment. This can become an issue, for example, if the a high-speed network is chosen for a course which requires broadband width and the student only has a telephone line at home for Internet access (Carnevale 1999). They may not have broadband access. Then the student could not take the course. Thus, the following questions become important: are the students going to have the

appropriate hardware and software needed? Is the cost going to be feasible?

Technical Support: The institution must address providing technical design and support for instructors along with student technical support. Having the technological support to aid in course design and to educate faculty about the technology is a must with Internet education. However, this requires resources that are not always in place at institutions. The instructor must be familiar with the technology and plan ahead. Instructors need to set objectives, develop, and install the course material on the web site prior to class for testing (Blanchard, McCade, and Wolfe 2000). This will ensure success when the students log-on for class. Technical support can assist with all of this. Additionally, students need to have someone or some resources to turn to when technical questions arise. Both instructor and student will be frustrated and most likely quit the Internet education game altogether if these issues are not resolved and in place prior to the launch of an on-line course.

Infrastructure Investment: Any institution considering a Web-based delivery method must make an adequate investment in the infrastructure. There are many ways to implement local area network to support web-based delivery. The most popular case it to connect all campus computers to the global network. This can be accomplished through the 10BaseT Ethernet that is adequate for general applications such as spreadsheets and word processing, 100BaseX Ethernet for high-speed, high-bandwidth applications such as sound and graphics, and asynchronous transfer mode (ATM), for voice, video and data interchange at high speed and quality over fiber-optic lines (Zirkle and Guan 2000). High-speed networks come with enticing features such as additional bandwidth and improved video quality but there are some drawbacks. They are quite expensive, their availability sometimes is limited, and engineers are usually still working out some of the bugs (Carnevale 1999). Backup capability, adequate storage and reliable security are also needed. To provide an infrastructure needed as described above, cost can become an issue along with manpower shortages. How will institutions fund this?

Political Obstacles

While pedagogical issues and technical hurdles can be overcome with planning and research, the most serious issues in Internet based education may well be political obstacles caused by existing organizational culture and infrastructure at an academic institution. We discuss the most important and common obstacles below.

Time Issues and Reward Structure: The instructor will spend more than double the time in student contact and course development than with an

on-site course (SchWeber 2000). Giving timely feedback is critical for the students to stay abreast with demands in a course (Ritter and Lemke 2000). This builds strong student confidence (Blanchard, McCade, Wolfe 2000), motivation (Ritter and Lemke 2000), and makes the distance in distance learning not seem so distant after all. But to establish the adequate feedback necessary, according to research, requires more time for the professor. Also, if there were no technical support provided, extra time would be used to resolve technical and course design issues. Will release time be provided? How are instructors paid? Is their evaluation and reward structure in place? Failing to develop a reward structure specifically for Internet instruction will discourage faculty participation (Chizmar and Williams 1996). Therefore, there must be a reward structure in place.

Copyright and Security Issues: Potential copyright and security issues also come into play with Internet teaching. Who has access to the materials and who has the ownership? Faculty members are concerned with both and may choose not to teach in the Internet based programs if these issues cannot be resolved.

LAUNCHING AN INTERNET PROGRAM

As noted above, there are many issues that an institution has to address when launching an Internet program. The following suggested guidelines will help to resolve some of the issues mentioned above.

Provide adequate administration support

Launching an Internet based education program is an information technology based project and requires a commitment and full support of university administration. This is true of any project but especially an information technology based development project. It has been proven that information system projects have a high risk of failure without it. Gaining the confidence and backing from senior administrators can aid in not only the funding but they can act as “cheerleaders” to gain support of other administrators. This will not only help with the current project but if the project is a success, they will support future endeavors as well. Administrators from all departments including department chairs, deans, computing systems, and network administrators all need to be included. A cost benefit analysis will need to be constructed and presented to justify the project (Hilton 1999). Obviously, stressing the benefits of the project and beginning with an administrator that is proactive to new projects and ideas is helpful. Cost could be justified through grants, tuition, and outside resources such as partnerships with technology corporations or alumni support. Once one administrator is in support of the project, it is easier to gain the support of the others. This should come after

the definition stage has been thoroughly thought through.

Choose a course for Internet based Education

When considering which course to offer over the Internet, it is suggested to start with an existing distance learning course that may be using video tape delivery video. By selecting an existing distance learning course, issues such as student resources, reward structure, time release issues, have already been addressed. They could be redesigned easily to apply to an Internet course. Also, the faculty member is familiar with distance learning and has a frame of reference. He/she is probably also a good candidate to experiment with technology. If there is not a current distance learning course, it is important to choose a course that the pedagogy would fit with a text based Internet course. It is important to make sure the technology fits with the pedagogy and not the other way around. A course involving lectures and reading could be chosen. English, history, and business law courses are suggested courses, however, there are many more that could be chosen. Why text based? Text based courses are the most simplistic means of teaching a course over the Internet. This will help reduce technology and resource costs including infrastructure, hardware, and software and technical support. Comparatively speaking, a text-based course requires minimal bandwidth, minimal hardware, and minimal cost.

Create a Workable Web Site

Faculty can use Web design software like Netscape Composer, Microsoft FrontPage, Adobe GoLive, Dream Weaver, etc. There is also specialized courseware such as packages like CourseInfo, WebCT, and Web Course in a Box which provide templates to present and store syllabi, course information, grades and provide for communication through bulletin boards, chat options and e-mail capabilities that faculty can use (Zirkle and Guan 2000). It is suggested to select a specialized courseware. These templates are easy to use and can serve as a catalyst for other courses that become Internet based. This will standardize the process of course design and training of faculty and technical support, which will aid in keeping costs low. This also allows for uniformity among courses in a program and can ease the technology learning curve of the students. Additionally, communication issues such as student-to-student interaction, student-to-faculty interaction, and faculty feedback and team collaboration among students are all addressed. An Internet course with the use of this courseware allows for abundant communications.

There are two options with housing courseware on a server, with the vendors or on the institutions server. Vendors will offer to house the course on their server without charge for a limited amount of server space.

This option is good if the institution does not have the manpower to administer the server. This means that the institution will have limited control over access and may face potential copyright and security issues. To overcome some of the copyright and security issues, housing the courseware is the best option. If the institution chooses to house the courseware there will be a fee. However, an advantage to this method is that the institution has more control over creating and maintaining accounts with the use of passwords (Zirkle and Guan 2000).

Create a Student Resource Page

Many of the student resource concerns can be addressed by creating a student resource page. This creates one Internet location that students can access to get the resources required to complete the course successfully. There can be a student orientation to familiarize the students to the software, registration capabilities, course materials ordering capabilities, technology assistance, library link, and have other links to helpful resources. If the institution has not established these items on-line for "one stop shopping", contact information such as phone numbers, e-mail addresses, and names could exist. The students then could easily find this information, however, eventually all services should be put on-line to aid the student.

Establish Technical and Maintenance Support

A centralized technical support staff is suggested. This allows for consistency with services provided. The technical staff can hold workshops teaching instructors how to use the available technology and its capabilities, can aid with the course design stage, and would be a source to assist with technical question from students and faculty during the implementation stage. The maintenance support will have the job of maintaining the resource page, taking on-line applications, answering questions regarding advising, registering, etc. This can be done with a departmental administrator at first and then a program administrator if a program on-line is created in the future. The use of graduate assistants can also help with both of these administration duties to begin with to keep costs low.

If the technical support is in place, faculty release time for course design could be kept to a minimum but is necessary for the first time an instructor is designing the course. A reward system through student evaluation and a monetary amount based on enrollments can encourage faculty participation. With these issues it is best to inquire with other institutions that have Internet courses and adjust to apply to your institution.

Establish an Evaluation Method and Maintenance Plan

The evaluation plan can be used within the reward system for faculty and valuable information on the success of the course can be gained. Also, data

collected from it can be presented to administrators as proof of success.

A maintenance plan must be established to ensure equipment is upgraded and maintained. Establish a particular person in charge of maintenance in the computing network department. This person can report to faculty members and course design personnel. The computing network staff is invaluable when it comes to this area. By upgrading, maintenance costs stay low and new technologies can be used as teaching aids. Technologic breakdown can also be avoided more easily when a plan is established which in turn lowers frustrations and skepticism of faculty and students.

SUMMARY

Internet based education is here to stay. In fact, the demand for Internet based education will increase in the future and will create new challenges and opportunities for the universities. Institutions, faculty, and administrators need to fully assess their capabilities of delivering courses via the Internet before leaping into the new distance learning pool. There are many issues and challenges that must be addressed such as pedagogical issues and teaching issues, administrative issues such as student resources, technical hurdles with tech support, hardware, and infrastructure investment, and political issues with time release and reward systems.

This paper has attempted to cover the issues that must be faced and has suggested guidelines to address these issues when an institution takes a course to the Internet. The suggested guidelines cover the following areas: gaining administrative support, choosing a course, creating a Web site, creating a resource page, establishing technical and maintenance support, and designing an evaluation and maintenance plan. Lot more research and planning are required to respond to the demand created by new information based instructional technologies like the Internet.

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