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Strategies of Adoption of Web-Based Distance Learning in Institutions of Higher Education

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Abstract

Higher educational institutions are experimenting, increasingly, with Internet-based distance learning. This paper discusses five evolutionary strategies for implementing Internet-based distance learning in institutions of higher education. The California State University, Fullerton is used as a case study to illustrate the strategies.

Introduction

Higher educational institutions are experimenting increasingly with Internet-based distance learning. Distance learning is becoming mainstream because of the increased accessibility, popularity, and ubiquitous nature of the World Wide Web (Twigg, 1999). Successes in Internet-based learning have ranged from random acts of progress resulting from individual accomplishments to massive invasion of comprehensive programs developed and supported by for-profit corporations (Dancing with the Devil, 1999a). Over the past few years, professors within institutions of higher education and administrative staff have experimented with at least five strategies for developing and delivering Web-based distance learning programs and courses. This paper will address the progression of postsecondary institutions in adopting Web-based distance learning through a discussion of the various program delivery Strategies. Due its rich Web-based learning environment and its adoption of various Web-based Strategies for delivering degree programs and courses to students via distributed learning and distance learning, the California State University at Fullerton will be used as a case study site for reviewing various strategies.

Strategy Comparison

Strategy 1: Individual Pioneer Developer

One often-encountered strategy in distance learning is that of a single instructor who wishes to pioneer the use of Web-based instruction at his or her institution. In such cases, the instructor has two technical obstacles to overcome in developing and hosting the course material. One is a decision regarding which Web development tools to use to construct a course Website tailored to the instructor's own concept of the features of a Web-based course. The choices have often been whether to utilize basic tools (e.g. HTML editors) or more advanced tools (e.g. FrontPage).

The second obstacle is that the instructor must also provide Web-hosting facilities, either on a campus server, or by using his or her own desktop PC as a server. In addition, there is a need for sufficient telephone access capacity to the server by its users. This "Individual Pioneer Developer Strategy," while interesting and a learning experience for the instructor, is not technically professional, nor does it provide a reliable platform for student access. It does not ensure the educational soundness of the developed course, nor does it assure student-to-student, or instructor-to-student interaction - an essential component of Web-based distance learning, The "Individual Pioneer Developer Strategy" results in the instructor's acquiring in-depth knowledge about the technology needed to develop and deliver Web-based learning programs and courses. However, it can result in a negative environment if the instructor devotes extra time to addressing the technology learning curve without gaining either an appreciation of concepts related to instructional design, nor to internal institutional rewards.

Strategy 2: Pioneer Adopter of Structured Systems

A second strategy often utilized by early adopter instructors is somewhat similar to the first, except that it does not require the instructor to utilize basic Web development tools to construct the Web-based course structure. In fact, such structures or templates have already been developed by other professionals or companies, and are in extensive use in the Internet-based course delivery community. Instructors discover these Web-based tools and address the learning curve needed to utilize them. Two examples of Web-based learning tools are WebCT and CourseInfo/Blackboard. Both these tools were researched and used to develop and deliver Web-based distance learning courses long before for-profit companies adopted them for distribution to the larger postsecondary education community. These software systems, developed by professors at the University of British Columbia and Cornell University,

enable non-technical instructors to produce online courses without much concern for the technical underpinnings of the systems. The systems require a rapid ramp-up time in instructor learning, but, once the tools are learned, the instructor can move quickly towards developing and delivering Web-based distance learning courses. Since profit-making companies have purchased the license rights to these products, and are now in the business of distributing these tools on a larger scale, the instructor's institution must now purchase a site license for these products. Often the instructor will need to have these products hosted on an institutional server.

Strategy 3: Pioneer Hunter, Gatherer, and Experimenter

Unfortunately, many institutions have neither the expertise nor resources to provide technical services to the instructor. In such cases, it is possible for the instructor to develop and host his course on the server of the software publisher (Hanna, 1998). For example, CourseInfo/Blackboard permits individual instructors to develop functionally restricted courses on Blackboard's servers, and also provides course-hosting services for the instructor's students for the duration of a course. The instructor has access to the resources and services provided by the company, including 24/7 technical help, instructor training, and instructional design support. Often instructors who have little or no instructional design background are left on their own to experiment with the software templates without knowing whether or how their courses will affect student learning.

Another, and more practical, limitation to this "free" service begins to be felt soon after the concept of Web-based course delivery begins to catch on in the instructor's institution. The limitation is that the software vendor's business is not the hosting and support of individual instructors. Rather, they are in the business of providing site licenses and technical (rather than instructional) support to licensing campuses. When this happens, instructors are faced with the problem of how to expand and grow their newfound skills. Instructors may have strong interest in implementing Web-based distance learning courses, but when they have little control over how to deal with the management and administration of their courses, negative feelings on the part of the instructor toward the institution often arise.

Strategy 4: Institution Pioneer Developer

Many institutions have taken an aggressive approach to developing and delivering Web-based distance learning programs. Some have attempted to develop their own systems based on the work of individual campus pioneers (Frieden, 1998). This approach often results in great progress due to the enthusiasm and success of the pioneer work of the technicians and the content developers. Such a solution to Web-based distance learning requires that the campus have a well-established, professional Information Technology (IT) organization available to install, support, and update the systems as well as to deal with 7/24 support necessary for faculty and students who use the system (Edge & Edge, 1999). This kind of facility alone does not guarantee that the campus will be successful in developing effective Web-based courses. Another essential, but often-overlooked, resource is the need for professional instructional design support for the faculty who develop courseware using the installed system. Institutional personnel may become so busy diggings for Web-based gold nuggets, that they overlook the start-up and maintenance funds needed to sustain such a venture. Effective planning in developing and delivering Web-based learning is essential (Dancing with the Devil, 1999b; Edge, D., 1999).

Strategy 5: Institution Hunter, Gatherer, and Experimenter

Institutions are discovering a new twist to developing and delivering Web-based distance learning. Many institutions have found that they are not equipped to provide the IT resources to support in-depth, Web-based distance learning operations. An alternative solution is to contract with a third-party vendor that offers complete hosting support as well as instructional design assistance for campus instructors. Institutions can partner with for-profit companies for assistance in identifying the market (Tucker, 1999), training their instructors, developing their courses, hosting their programs, evaluating their progress, and reporting on the status of the systems (http://www.connectedlearning.net).

An example of such a vendor is Connected Learning.Network. CL.N offers differentially priced hosting and support services for instructors, depending on the extent of their needs. An interesting phenomenon taking place in the field of Web-based distance learning is the incredible interest and increased use of these technologies to deliver instruction to both campus-based and remote students. In most cases, the rate of adoption of the technologies among instructors is unprecedented. This strategy provides a total solutions technology plan for the institution that can be embraced by both the instructors and the administrative staff.

Case Study of Experimentation and Scales of Change

The Example of California State University, Fullerton.

California State University, Fullerton (CSUF), located in Southern California (near Disneyland) is one of 22 universities in the California State University (CSU)

System. There are approximately 25,000 enrolled undergraduates and 1,500 full and part-time instructors. At CSUF in January 1997, there was not a single course or partial course being offered on the World Wide Web (WWW.) By November 1997, two early-adopter instructors had adopted Strategy 1 (using FrontPage) and Strategy 2 (using WebCT) to deliver supplemental course information on the WWW. At about the same time, the university underwent some minor reorganization wherein a new function, the Faculty Development Center (FDC) was created. The FDC's mission was twofold; i) to promote the use of effective technology in teaching and learning, and ii) to promote the principles of assessment in student learning outcomes throughout the university.

In order to actualize the first mission, the FDC site licensed WebCT and developed plans and programs to promote its use among faculty – Strategy 4, described above. Within 12 months, the rate of adoption and use of WebCT exceeded the FDC's wildest expectations. A drawback to WebCT's increased adoption however, was the perception of many instructors that the product was too complex for their needs. Accordingly, the FDC site licensed CourseInfo/BlackBoard - a system that is more functionally limited but, at the same time, easier to learn and use. By December of 1999 more than 300 instructors, using these tools had built more than 700 course Web-based supplements to their courses.

By the end of 1999, the demand for training and support for Web-based instruction began to soar. In a survey of faculty conducted at that time, more than 600 instructors had integrated Web-based technology into 720 courses affecting almost 20,000 students! In order to capitalize on the popularity of Web-based instruction as well as on the economics of reaching physically remote learners, the Department of Nursing, and the College of Business both approached the FDC for assistance in developing and delivering complete multi-course, Web-based degree programs. These requirements were simply more than the FDC could handle with its relatively limited resources.

Rather than dismiss these opportunities, it seemed that it was time to adopt Strategy 5 described above. That is, instead of attempting to develop and support this extensive set of needs internally, it was decided that perhaps it would be wiser to outsource the projects in their entirety (Tsichritzis, 1999). Thus, FDC began to investigate the availability of companies who specialized in total systems solutions for developing and delivering Web-based distance learning programs. Consequently, the company, Connected Learning.Network was contacted to discuss the needs of these programs and to seek ways in which CL.N could provide turnkey solutions. Some of the many questions that the FDC formulated in trying to make decisions about outsourcing these programs to a company consisted of: How quickly could the company convert course content to fully-developed online courses? Did the company offer 24/7 help desk support to students and faculty? Did the company offer faculty training? Did the company offer instructional design services? Did the company offer course hosting services on high-speed servers? Could the company provide administrative support and report development services? Could the company assist with program marketing? Was the Web-based online software system robust and scalable? Could the instructor develop course content from remote locations? Could the software accommodate multiple uses with different faculty and course needs? Were the services reasonable in cost? Did the company retain rights on the software content developed for the courses? These were but a few of the questions developed in addressing the needs for employing a company such as Connected Learning. Network to partner with CSUF.

Since most of the students expected to enroll in the two Web-based CSUF degree programs would not be 'regular' undergraduate students, it was necessary to implement a student administration system (enrolling and fee collection) that would not interfere with and would be consonant with existing policies and procedures for student registration and fee collection. Also, students enrolled in these programs would be remote and not be required physically to visit the campus, it was essential for the courses to be instructionally sound and completely self-contained. Connected Learning.Network could provide the instructional design and support systems needed to address this population. It could help the institution develop the right type of program to meet the needs of these unique populations. Furthermore, Connected Learning.Network could do all of this at an extremely competitive cost.

Summary

Like many institutions, the faculty at California State University at Fullerton (CSUF) have experimented and adopted many Web-based distance-learning systems for offering courses online. Likewise, the institution has experimented with and supported a range of distance learning technologies for offering online courses. With the explosion and expansion of Web-based distance learning programs, institutions are struggling to address the need for faculty to develop quality programs and services. This need for development and support by faculty is driving the development of new e-learning companies at a phenomenal rate.

The National Center for Education Statistics reported in 1999 that institutions of higher education would enroll over two million distance learners by 2002 (U.S. NCES, 1999). The March, 2000 issue of *Syllabus Magazine*

(Boettcher, 2000) reported that large institutions are beginning to look to companies to help support the growing number of distance learners. The authors believe that this fast-paced change will continue to occur in higher education. It is projected that institutions of higher education and corporations will become major partners in future strategies of educating distance learners. The success of the ongoing Internet-based instructional activities at California State University, Fullerton can serve as a roll strategy of how such undertakings will provide successful strategies for other, similar institutions.

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