Get Wired, Go Digital Build a Web-Based Learning Community

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The challenges facing higher education due to increasing costs, declining enrollments, diverse learning styles of students, demands for accountability, rapid advances in information technology, have created an environment conducive to the development of alternative ways to deliver instruction.

Today's undergraduates are not just traditional eighteen-year-olds but adults from diverse socioeconomic backgrounds, many with families, seeking skills for their careers. They no longer want a "just in time" education. They seek a "just for you" customized education tailored to meet their specific lifelong learning requirements (Duderstadt, 1998). How can higher education respond to these challenges?

THE DIGITAL DISTANCE EDUCATION ALTERNATIVE

If you are one of the many trying to keep up with the digital revolution, I am sure that you have entertained the notion of developing a course for delivery by the electronic media. I will present some of the basic issues in design, development and implementation that faculty and administrators face when making the decision to "get wired and go digital."

MARKETPLACE

Is there a market for your course? Have you done a market survey to determine if there is an audience? A clear definition of that marketplace will make the course saleable. In 1995, seventy-five accredited U.S. colleges and universities offered online degrees. A recent issue of *The Chronicle of Higher Education*, projected that by the year 2000, 97% of universities will offer courses online. Durderstadt (Cause/Effect Winter 1997-98) pointed out that we could anticipate a 30% growth in demand for educational services over the next two decades. The National Center for Education Statistics (http://www.nces.ed.gov) states that out of 14.3 million students enrolled in higher education during the fall of 1994, 758,640 students were formally enrolled in distance courses. Currently, distance programs include the Western Governors University, a virtual school that will make electronic course accessible from colleges and universities throughout the nation; Duke University, the University of Virginia, New York University, the University of Texas El Paso, and the University of Phoenix. For the past two years, UCLA has been offering 75 online courses each semester in Business and Management, Education, Humanities, the Writers Program, and Computer Information Systems. Corp-orations are also engaged in online and multimedia distance programs. Motorola, Xerox, Federal Express, Microsoft on Line Institute, and the Home Education Network are all engaging in a $50 billion dollar a year marketplace. That market is expected to grow to over $200 billion just to keep pace with the demands for a technologically astute workforce. There is a market!

BENEFITS

The perceived benefits of distance and online learning can be summarized as:
- Convenience – today's student works late, travels, is homebound, and cannot easily meet the time restraints of traditional on campus classes.
- Costs – less for students, for example, the University of Phoenix offers an MBA for $21,000 or about half the price of a comparable course at the University of California. Three-day workshops cost $1,800 plus travel while the same online training program cost $600. On-site training can range from $12,000 to $17,000 for three one-day sessions, while the cost for the same number of employees online is $3,000.
- Real life situations – built into distance learning are the challenges of budgeting time, working with technology, cross discipline teams, diverse cultures, and communications issues.
- Fosters knowledge – about electronic commerce and virtual organizations.
- Learning tailored to the individual – education is "just for you."
- Engages the student in the process of learning – one cannot hide in the back of an electronic classroom.
- Instructor expertise – extended to a larger population.

FORMAT

What format do you want to use? Delivery of instruction through a distance class can be accomplished with many multimedia resources: video, audio/slide, print, CD-ROM, e-mail, web-based, and chat/conference, or any combination of these. Do you have the expertise to design and deliv-

er through a variety of multimedia? Are you prepared to be an instructional designer, graphics artist, digital video and audio technician, a webmaster, or administrator of a server? Does your institution have people to assist you? It is important to consider the format for delivery and the resources available.

WORLD WIDE WEB DELIVERY

Let us take a look at one type of course delivery, the World Wide Web. A recent estimate of cyberspace suggests that there are about 320 million web pages, and even the best search agents are able to index only 40% of them. In the next few years the number of web pages is expected to grow by 1000% (S. Lawrence, April 1998). This makes a web course a needle in a cyberstack.

So what can you do to distinguish the course? How will you gain an audience? How and who will sell it? A recent survey of institutions offering distance learning classes indicated that 68% of the students taking courses were already students on campus. When queried about how they advertised the classes, it was to their existing student base. So if your goal is to increase market share a full global ad campaign is essential. Do you have the budget to compete in this crowded arena?

FACULTY, ADMINISTRATOR, STUDENT ROLE CHANGES

Are you ready for the profound changes in role that take place once you start the distance learning development process? The Adminis-trator role is to reorganize work, empower the faculty, encourage collaboration, establish the business partnerships, and provide the environment, inspiration and leadership to move a campus forward in the process of delivering instruction. The faculty will be assuming the role of a change agent by creating a student centered virtual learning community. They become designers and managers of learning experiences. They no longer do the "work of teaching." They create an environment that shifts the"work of learning" to the student. The students become the center as interactive collaborative learners.

COPYRIGHT ISSUES

Resolve the Intellectu- al Property Issues with the higher education constituents involved, before you get started down the path to distance learning. Clear allocation of copyright ownership and control is necessary to avoid disputes over electronic course materials. Who owns the content? Are all graphics and text cleared for digital publication? The present state of copyright law is not clear when it comes to Web-based instruction. Is the work a commissioned work created by an independent contractor? Is the work a "for hire" project? If so, ownership belongs to the employer rather than the creator. Works, with an institutional author, are protected for 75 years, while works by individual authors have protection for 50 years. Investigate the options. They seem to fall into two models of ownership; the "patent model," ownership transferred from the inventor to the sponsoring institution; or the "text book model," the author retains the copyright and assumes the

primary responsibility for licensing and managing the book (Burk, 1997). It is imperative that faculty and administrators develop an appropriate intellectual property policy. Whatever model is selected, you must be sure to consider rigorous management for the licensing, policing, and enforcement of copyrights.

FACULTY TIME AND WORKLOAD

Collaborative efforts are needed to define the ways that faculty allocates their time and the results must be committed to paper. Teaching, research and creative work, service, and professional devel- opment are the four areas that need redefinition. Where does Web based distance learning fit? Do you consider distance learning courses as regular work or are they parts of overload pay? Have you considered the reward structures for the faculty? Will your program require redevelopment of curriculum? Will faculty receive time, recognition, and pay for the project?

TEN STEP DEVELOPMENT PROCESS

It is a difficult task to storyboard a course that fulfills the mission to create a challenging and novel environment. An environment that helps learners connect new information to past knowledge; one that searches for meaning and ponders about how they learn within a virtual learning community (Bonk & Reynolds, 1997). It is not an impossible activity.

MEASUREMENTS

Establish a measure for each step against the criteria. Some suggestions to consider are:

- Have you created a motivating learner centered environment?
- Have you incorporated challenge, fantasy and curiosity into a variety of activities?
- Do the exercises engage students in divergent or creative thinking?
- Does the course include conferencing and interactive chat requirements for thinking about related activities?

Are you prepared to be an instructional designer; graphics artist, digital video and audio technician, a webmaster; or administrator of a server?

- Are students required to create graphic representations of knowledge?
- Do they have to categorize or prioritize ideas?
- Are students asked to role-play, engage in case studies, debate, hold mock trials, and write reflections?
- Do students form teams, define projects, research them, carry them out, and present the results?
- Are students encouraged to use the capabilities of the web to use text, graphics, animation, sound and video in their presentations?
- Have you included electronic mentorships?
- Have you used e-mail to increase communication?

IMPLEMENTATION ISSUES

Now that the course has been developed just how do you host it? Will you use it in house on your Web site? If so, make sure that the internal Information Technology organization has the resources, network and telecommunications capacity to enable 30 or more people to go online. Can they handle the volume of work associated with the course? Do they have the capability to distribute updated content, handle the help desk questions that are associated with start up courses? Do they have e-commerce management software? Are they flexible and willing to help you make the course a success? If not, outsource it or go into partnership with people who can host it properly. There are many service providers who want the business. As a content developer you want to be sure that you are able to revise and refine the content. What are the upfront costs and ongoing costs, and do you have a budget? Make sure you can manage an outsource operation and the arrangements for e-commerce, and be sure 24-hour-a-day help desk are part of the contract.

HOW HAS DOWLING COLLEGE USED THE WEB FOR INSTRUCTION?

We are at the pioneer stage of development for our college. For the past several years, we have used the Web for recruitment and to create a corporate identity. This year is the first time that we are using the Web to extend our reach by developing a virtual learning community. We are using the Web to extend our K-12 Higher Education Partnerships, to train our faculty, students, staff and administrators, to individualize student instruction and expand our continuing education program. We have 19 different chat and conference rooms associated with different physical classes to help extend the communication needs by faculty and students.

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K-12 HIGHER EDUCATION PARTNERSHIPS

Several years ago, Dowling had established an extensive partnership with a local school district, Kings Park Public Schools. The Schools of Business, Arts Sciences and Humanities, Education, Aviation and Trans-portation, and Continuing Education hold classes at the Kings Park campus. Our professors travel from the Dowling College Oakdale Campus to the K-12 schools.

The high school students enthusiastically received an introductory Computer Infor-mation Systems (CIS) course. The logistic problems of matching the instructors' schedules to the students' time were one problem faced by both institutions. The high school has a block schedule that held seminars on Monday, Wednesday, and Friday one week, and Tuesday and Thursday the next throughout the semester. The college instructor taught classes on Monday and Wednesday at the college campus and was free on Tuesday and Thursday for the high school project. Dowling College also recognized that this one high school was a small part of a larger student marketplace. The public school also saw that the students could take college courses for credit at a nominal fee and cut the costs for the freshman year of college, providing a value for both the student and the college. We began to search for an alternative delivery system. The Web was selected.

ADMINISTRATIVE SUPPORT AND FUNDING

The CIS course will be the first credit Web-based course offered by our college. The Provost was supportive of its development. The faculty member suggested taking an existing CIS course and reorganizing it for Web delivery. Anticipating a time consuming project, she applied for and was granted college funding for the project. It consisted of six credits of release time for the winter session. The Provost, with the concurrence of the Executive Board of the Faculty Union, authorized the process known as administrative release time.

THE CIS COURSE

The CIS class is a literacy class with a lab component. It is usually run in a physical environment over a 13-week semester but has also been offered in a 4-5 week session as well. Most of the content is lecture based and has hands-on lab sessions. It includes quizzes, lab assignments, and exams. Lab assignments can be resubmitted for higher grades. The students must have Internet access. In our situation the local county public library does offer free Internet accounts to all residents. Microsoft Office 97 and a Web browser are required.

DESIGN CONSIDERATIONS

The decision to create a pilot for the summer and fall semester was based on the need to refine the class. The faculty member is still not sure that the high school audience can handle open-ended projects due to the required self-discipline. She is also concerned about how to handle upgrades in software because of the continuous technological changes. Experiments with various testing methods are her goal. She is also exploring the use of chat and conference rooms to facilitate dialog. The syllabus, class lectures, step-by-step lab instructions, self-grading quizzes, and project assignments will be available on the Web throughout the semester.

Upon registration, a student would be assigned a password to enter the Web site. Each student would have to be able to send and receive documents, and e-mail.

PROFESSIONAL DEVELOPMENT

One of the most vital needs for the growth of our staff, faculty, and administrators is the continued updating of skills. We live in a technologically advanced and information rich

world. We need to continue to grow. Using the World Wide Web as a way of providing instruction at Dowling College became a necessity after four years of trying to do it the traditional way. We have over 700 employees including 110 faculty, 68 administrators, and over 200 adjunct professors. It was almost impossible to keep up with the demands for professional development classes. Our labs are full, opened over 93 hours a week for classes. Scheduling time for professional development becomes an impossibility. Yearly surveys of our constituents indicated a tremendous desire to learn. We were unable to meet the demand.

After a search and evaluation of materials, multimedia, videotape, and print over a three-year period, I settled on Anderson Soft-Teach materials. I contracted with the company for the license to use their courseware on a secure Web site that is accessible only to our students, faculty and administrators. They provided the content in Adobe Portable Document Format (PDF). We host it on our Web site and provide a log-on and password. We run virtual classes in Microsoft Office 97, Windows 95 and 3.1, and lower versions of Word, Access, Excel, and PowerPoint. Based upon the usage statistics, we intend to increase our offerings by contracting with other companies and creating our own courses. One of our librarians is working to create bibliographic instruction classes for the Web. Our continuing education program offers e-mail classes in a variety of subjects.

INDIVIDUALIZED INSTRUCTION

The successful use of the Web-based professional development classes inspired one of our professors to use the materials to individualize instruction in her orientation and business classes. A table of contents page is listed on the Professional Development Web site for each piece of software. The table of contents is designed as an outline for the user to look at before downloading a lesson. The instructor prints the table of contents page, gives a copy to the student, and uses it for self-assessment. She then asks the students to go down one lesson from the one they think they are ready to learn. The student downloads the PDF files and works on the lessons in class. The teacher moves from student to student to facilitate learning. The students learn the content at their own rate. They report overwhelming enthusiasm for the class because they are not forced to relearn content they know or wait until the whole class catches up to them to learn something new. The instructor now has technology tools to assist her with individualized instruction.

CONFERENCE AND CHAT ROOMS

This year we decided to evaluate the use of a chat and conference room product as an addition to our Web side. We have evaluated the product for the past year. Separate rooms were set up to do different things, writing online, math tutoring, CIS classes, connecting students in special education programs with their faculty, aviation safety, student-to-student exchanges, and as a way for adjuncts to reach full time faculty. For the most part the rooms were as successful as the participants made them. The advantages of the conference enabled us to bridge problems associated with the diversity of equipment. Some students and faculty have different operating systems, browsers, e-mail on

their own machines, making communicating a challenge. This web technology bridges the tower of babble problem. We have tested it by shipping files in to the site from all different operating systems and file types, and have had success. In the long run its use for pedagogy will depend upon how the faculty incorporates it into the curriculum.

As the use of the Web expands, we will need to manage and organize differently. There are many products, Adobe Acrobat, Lotus Learning Space, ConnectNet, RealEducation, in the market place that deserve evaluation. Web-based instruction is growing, so too, are the exciting new virtual technologies, real video, real audio, telepresence which will dramatically alter modes of instruction in the future.

OBSTACLES

There are still many barriers to the integration of technology and Web-based instruction into the curriculum:

The Culture of Higher Education is an unfriendly place for innovation in teaching and learning. The state departments of education still credential based on seat time and credit hours. The institutions do not include innovation in their tenure evaluations.

Innovations take time and this is also true of the learning curve associated with working with new technologies. Faculty time is pulled in so many directions, and there is an unrealistic expectation that new technologies can be incorporated into the curriculum process as just another activity. Higher Education institutions do not incorporate staff development into the work environment. Higher Education is supposed to be learning institutions, but for some reason they do

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TEN-STEP DEVELOPMENT PROCESS

1 ▸ Establish a clear definition of Goals, Objectives, and Learner Outcomes

2 ▸ Define Prerequisites

3 ▸ Create a Course Syllabus

4 ▸ Profile the Instructor

5 ▸ List all the Required Materials

6 ▸ Provide Additional Resources

7 ▸ Establish Assessment Methods

8 ▸ Pilot the Course

9 ▸ Collect Data for Revision & Refinement

10 ▸ Go Digital, Get Wired

We live in a technologically advanced and information rich world. We need to continue to grow. Using the World Wide Web as a way of providing instruction at Dowling College became a necessity after four years of trying to do it the traditional way

not value the creation of new learning modes.

Evaluation and Rewards do not encourage risk taking which can result in lower evaluations over the short term. Disincentives abound which discourage experimenting.

Where are the classrooms fully equipped for innovative learning? Where is the support from information systems departments? Where is the celebration associated with a pioneer risk taker who tries a new method? Research, publishing and "chalk and talk" methods are prized.

Culture of Autonomy stresses the solitary activity of the classroom. Innovation requires collaboration, team teaching and building partnerships. It requires review by others.

Despite the obstacles, the establishment of a Web-based Virtual Learning Community can happen. It takes vision, planning, resources, and risks. Get Wired and Go Digital. ■

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