A SYSTEMATIC APPROACH TO THE DEVELOPMENT OF A DISTANT EDUCATION INTERNET-BASED FOUNDATION COURSE IN MIS

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ABSTRACT

As distance education becomes a mainstay delivery technique in the education of today's college student, investigation of the various media, software, and techniques of delivery will become more important. This paper discusses the development process for an undergraduate Internet-based foundation course in MIS. It details the development process and illustrates a systematic approach to curricula creation.

Keywords: Distance education, development systems, Delivery systems

INTRODUCTION

In the University of Wisconsin System several institutions have been designated as non-doctoral institutions. Of the twelve institutions in this category, five provide an MIS or CIS major. Even though all of these institutions had been engaged in on-campus delivery and distance education delivery via media such as compressed video, two-way audio/video, and the Internet, they were basically functioning as independent institutions. Looking to provide efficiency and effectiveness in education, five of the institutions formed a consortium to provide foundation courses leading toward an undergraduate degree from the College of Business. It was the intention of the consortium to allow each institution to continue to provide the degree as they had envisioned it and to allow students to obtain prerequisite educational background prior to entering the College of Business without eating up the resources needed to administer the on-campus program. In addition, the administration at each of these institutions wanted to have the flexibility of providing the enrolled students in the respective business programs the opportunity to take courses from another institution if they so desired.

NEEDS ANALYSIS

The increasingly changing business environment that students face when they graduate indicates the need for ongoing curricular improvement. Alumni report that their familiarity with technology and their ability to use it to learn has enhanced their position in the business world. Curricula integrating the use of learning technologies into the curriculum will provided some level of expertise in the use of the World Wide Web and leading distance education software such as Blackboard and WebCT as well as groupware such as Lotus Notes and a Notes application call LearningSpace.

By using both the existing and emerging synchronous and asynchronous technologies, the institutions sought to achieve the goal of providing students throughout Wisconsin with access to quality educational opportunities while lessening the need for costly duplicate investment in educational resources. (Grant Proposal, 1997) Specifically, through a careful mix of faculty and technology, the quality of course offering could possibly be enhanced.

RELATED LITERATURE

The Wisconsin MBA Foundation Project

Similar projects have been developed at the graduate level. A grant providing funding for the development of the Internet delivery of foundation courses needed to enter the MBA programs provided the impetus for the Universities in the MBA consortium to develop an undergraduate consortium. The purpose of the MBA Foundation Project was to:

- Expand cooperative efforts among colleges to offer foundation modules and MBA electives via the Internet.
- Address the educational needs of customers.
- Coordinate distributed learning service among the participating colleges.
- Enhance faculty technology development opportunities through training provided via faculty-trainer programs within each college.
- Develop a Lotus Notes/LearningSpace Web site for MBA foundation courses.
- Investigate the applicability of new Internet-based learning technologies for potential use by the participating college faculties.
- Explore the possibility of developing a series of non-credit modules capable of being delivered asynchronously over the Internet to support "just-in-time-learning" students. (MBA Grant, 1997)

The project was divided into three phases. The first phase (1998-1999) was designated the Development Phase. The second phase was identified as the Implementation Phase (1999-2000) and the third, the Assessment Phase (2000-2001).

Background Literature

Well-featured asynchronous computer-based courses have been offered for more than a decade, and research findings have been reported concerning several aspects of learning in asynchronous vs. traditional classroom environments. These include the following:

- *Higher satisfaction*. Asynchronous students feel that the system is a valuable part of their learning (1), they have better access to professors, that classes are more convenient overall, and that they toke a more active part in their courses.
- *Greater learning*. Students take advantage of the extra time availability of examples (2) and frequently work harder to keep up with their classmates.
- *High initial enthusiasm*. Asynchronous students are more enthusiastic initially, frequently producing an overwhelming amount of communication during the first few weeks of an asynchronous course and falling off later. It is possible that system design can be used to structure message volume and, potentially, student enthusiasm to more sustainable levels (3); (4).
- *Lower confidence and prioritization.* Students have less confidence in information provided via electronic communication than that received face-to-face (5), and asynchronous students are more likely to stop attending class if they get busy with other activities.

- *Individual, task, and context dependencies.* One line of research indicates that asynchronous communication systems offer different patterns of support than traditional media for students with certain individual characteristics (1).

In summary, the literature suggests that asynchronous distance education is a complex process that has both intrinsic benefits and detriments in comparison with traditional instruction methods. It is particularly important to note studies that find association between system design elements and specific outcomes, as these suggest that asynchronous delivery can be "fine-tuned" beyond its current capabilities. In total, the literature supports new development and testing of asynchronous distance education programs, such as the MBA consortium foundation project.

THE DEVELOPMENT SYSTEM

The development team(s) for each of the College of Business foundation courses was to be made up of representatives from one or more colleges. The individuals serving on the teams decide the extent of the course content development by each member. The development team members agreed to:

- participate in team meetings and coordinate curriculum development
- meet with developers and curriculum designers each week to review progress and to coordinate design and procedures
- prepare instructional modules for conversion to the common format to be used with Blackboard
- teach the first offering of the Internet Course
- conduct virtual office hours
- provide revisions to the course

The College of Business Foundation Course Development System included the utilization of personnel and technical assistance from the Curriculum and Instructional Technology group on each campus. The modules were tested in the Curriculum and Instructional Technology Institute (CITI). CITI is a center that has been set up to specifically provides instruction and testing for faculty at the University of Wisconsin-Eau Claire (6). Previously the University of Wisconsin Learning Innovation Center (LI) was used to coordinate the development. However, LI, an organization set up to coordinate the development of the foundation courses and to ensure that uniformity and standards are met for each of the courses developed, is gradually giving way to each of the development groups on each specific campus. Figure 1 provides the activities involved in the development of a course.

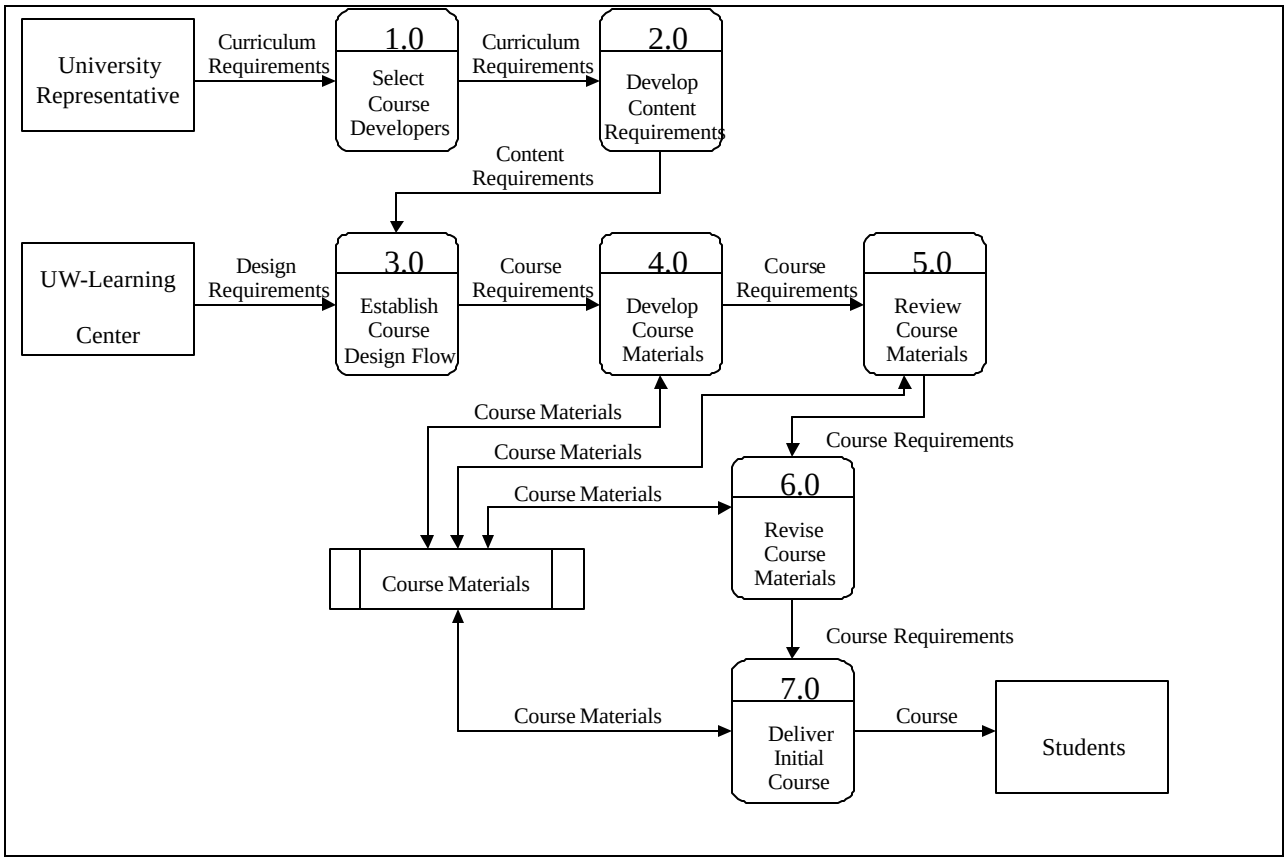

Figure 1. Consortium Foundation System course development data flow.

The System Defined

The development of each of the foundation courses required for entry into the College of Business, or an elective course that may support the degree programs in the Colleges, are developed in basically the same manner. Participating institutions select the faculty representative(s) who will cooperate in the development of the course. These individuals meet to establish the course content, activities to be completed, the assessment techniques, etc. Once the preliminaries have been decided upon, the development team has an initial meeting with the curriculum designer. The purpose of this meeting is to make sure that all developers have a thorough understanding of the technologies to be used for the delivery of the course. Since the Internet, Blackboard and Microsoft

PowerPoint are the primary hardware and software tools to be used, the developers must understand the role of the interactive modules. Blackboard provides the structure which allows the instructor to store the course materials, assignments and feedback on self-administered exams. Blackboard also allows students to store their profile. A profile is a database of faculty

and student information. These profiles are self-created. There is also an area in Blackboard for assessment purposes to maintain a private reporting of the results of assignments and examinations. Virtual Classroom supports the efforts of teams to collaborate on assignments for the course. The Assessment Manager is a tool used for creating and reviewing tests and surveys. Student grading is managed via this module.

Review Process

Faculty develops the content units of the course and the information is reviewed by the curriculum designer to ensure that design and flow are appropriate for delivery via the technology being utilized. It is the responsibility of the instructional designer to change electronic format to conform to the hardware and software being used.
After the review by the instructional designer, the materials are revised accordingly. The revised course materials are then put into a standard course format so the learner basically sees the "same thing" as they enroll in course after course.

Developing the Course

Faculty members developing the course content and activities need not be overly concerned about the students' hardware and software availability. They are encouraged to plan the course as they would if it were being delivered in the classroom. The developer might plan to use a video tape, software programs and/or Competency Based Training modules as part of their instruction. The instructional designer is responsible in determining how this media is best delivered to the student. In some cases they may duplicate the video tape or CD-ROM and send them to students or the media may be delivered via the Web.

Types of Activities

Instructors are encouraged to utilize activities that best assist in delivery of content to achieve the objectives of the course. Dr. Jay Holmen, the developer of the Financial and Managerial Accounting foundation course, set up an area in the Discussion Area entitled "Hallway" for any discussions that students may want to carry on that do not pertain to the course. This special area gives the students and opportunity to discuss issues of mutual concern without impacting any discussions pertaining specifically to the course.

Launching the Course

Each student enrolled in a course completes the registration at his/her respective institution and is provided an access code by the instructor responsible for the course. If the student is from outside of the state, they would apply as a special student and register at the institution of their choice. As the student comes on-line on the Internet for the specific course, they are given an opportunity to test their hardware capabilities in relationship to the hardware specifications

required to complete the course. If they do not have the appropriate hardware capabilities, they are informed at that point. Currently the students are notified that their hardware is inadequate to fulfill all requirements for the course. It is up to the student to obtain appropriate hardware. Planned for next year is an option whereby the student would have the opportunity to lease the appropriate hardware.
Students are given the opportunity to order the textbook on-line or they may print off the form and complete the purchase via snail mail.

Virtual Office Hours

As each course is delivered via the Internet and/or via supporting media, the instructor responsible for the course is to maintain virtual office hours. Since these office hours are maintained via Blackboard and the virtual chat area, it is not necessary for students or instructor to be in any one location. Although not required to be on-line during the stated office hours, students are able to rely on the instructor being available. The instructor is also generally available to support the student needs via e-mail and voice mail if necessary.

FUTURE OUTCOMES

The initial launch of our MIS foundations is scheduled for June 2002. Thus, by the time of the IACIS conference convenes in October, 2002 the author will be in a position to report on the trials and tribulations of developing and delivering an asynchronous Internet based foundation course in MIS at the undergraduate level.

REFERENCES

1. Wilson, E. V. (1998). Determinants of communication in student software development teams. In *Refereed Proceedings of the 1998 International Association of Computer Information Systems Conference* (pp. 353-359). Cancun, Mexico.
2. McIntyre, D. R., & Wolff, F. G. (1998). An experiment with WWW interactive learning in university education. *Computers & Education, 31,* 255-264.
3. Stoney, S., & Wild, M. (1998). Motivation and interface design: Maximising learning opportunities. *Journal of Computer Assisted Learning, 14,* 40-50.
4. Warren, K. J., & Rada, R. (1998). Sustaining computer-mediated communication in university courses. *Journal of Computer Assisted Learning, 14,* 71-80.
5. Trushell, J., Reymond, C., Herrera, R, & Dixon, P. (1997). Undergraduate students' use of information communicated during e-mail "tutorials." *Computers in Education, 28* (1), 11-21.
6. LaBarre, James & Wilson, E.V. (2002), Web-Based Instructional Learning, pp. 172-176.
7. IRM Press, Hersey, PA.
8. Lou, Van Slyke, & Luo, W. (1999). Asynchronous collaborative learning: The mitigating influence of LearningSpace™. In M. Khosroepour (Ed.), *Managing Information Technology Resources in Organizations in the Next Millenium,* pp. 874-875. Hershey, PA: Idea Group Publishing.