Examining Instructional Design and Development of a Web-Based Course: A Case Study

Bude Su, Indiana University, USA

ABSTRACT

This paper describes the design and development process of adapting computer mediated learning from a residential course to a World Wide Web-based course offered in the distance master’s degree program in Instructional Systems Technology at a large Midwestern university. A description of the Web-based course, findings regarding the adaptation process, the major changes in course components, student reactions to the Web-based course features, and its implications for designing and developing Web-based courses are discussed. Through examining the instructional design and development process of this graduate course, the researcher provides useful references for instructors who need to teach a Web-based course in the future.

Keywords: course adaptation process; instructional development process in distance education; instruction design in distance education; student reactions to Web-based course; Web-based course design

INTRODUCTION

The growth of using Web-based instruction in higher education has been remarkable. Between the fall of 1995 and 1997 to 1998, the percentage of higher education institutions offering distance education courses in the United States increased from 33% to 44%. The percentage of institutions using asynchronous Internet-based technologies nearly tripled from 22% of institutions in 1995 to 60% of institutions in 1997 to 1998 (National Center for Education Statistics [NCES], 1998). More and more distance students are taking Web-based courses instead of learning through live audio or television. Sixty-eight percent of the master’s students who participated in distance education classes used the World Wide Web, while 45% and 29% of the master’s stu-
tudents used live or pre-recorded audio or television, respectively (NCES, 2002).

Although Web-based education is growing fast, educators are not ready necessarily to teach online courses. Instructors in higher education often are asked by institutions to build online courses or to adapt some of their face-to-face courses to be delivered online. But are they ready to offer Web-based courses? Do they have enough references to which to refer? According to a National Center for Education Statistics report (2001), one of the greatest difficulties of teaching online was the lack of guidance on how to teach with technologies in their own situations. It seems clear to us that the instructional design field needs to have new and revised methods of instruction in order to take full advantage of the World Wide Web in education. In this study, through examining the instructional design process of a graduate level Web-based course, the researcher hopes to provide useful references for educators who may need to conduct a similar Web-based course in the near future.

RESEARCH QUESTIONS
1. How did the instructors and course designers build the Web-based course?
2. What major changes were made during course adaptation? Why?
3. What are the students’ reactions to the course features?

CONCEPTUALIZATION AND LITERATURE REVIEW

Instructional design also is known as instructional systems design (ISD). It is a systematic development of instruction using teaching and learning theories to ensure the quality of instruction. The instructional design process is concerned with “what process(es) a teacher or instructional designer should use to plan and prepare for the instruction” (Reigeluth, 1999, p. 13). It is the process of combining analysis of learning needs and objectives with the design and development of a delivery system to meet those needs; it contains development of instructional materials and activities and tests and evaluates all instruction and learner activities.

Designing any type of instruction involves identifying the overall instructional goal and the corresponding theoretical and pedagogical strategies that will help accomplish that goal. When people are faced with developing an online course that needs to be delivered through a relatively new medium, such as the World Wide Web, they tend to concentrate on the technological issues, such as the capabilities of the medium, instead of focusing on the instructional objectives, learner needs, specific task designs, and so forth (Bannan & Milheim, 1997; Rieber, 1994).

Littlejohn (2002) pointed out that there are several critical issues in instructional design in Web-based higher education that should be addressed to match the rapid shift toward online learning.

- **It should focus on course outcomes rather than content.** Heavy content-based course design without considering the possible learning outcomes may result in an unengaging learning experience, leading to surface learning. For this reason, educators should focus on the achievement of learning outcomes when developing online courses.
- **It should be placing dialogue and feedback central to course design.** Merely assigning a task to students is not enough for quality learning. Providing communication and collaboration is a critical part of online learning, and thus,
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