

The Design and Development of an Online, Case-based Course in a Teacher Preparation Program

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Abstract

The goals of this study were to: 1) design a web-based course using WebCT for future secondary school teachers at the University of Texas Pan American, 2) evaluate the effectiveness of the course, and 3) provide a set of guidelines for designing web-based courses for other teacher educators. The participants in this study consisted of junior- and senior-level students enrolled in a secondary, teacher education program at the University of Texas Pan American. There were 17 participants, 71% were female and 29% were male. All of the participants fit at least one of the characteristics of a “nontraditional” student. All of them were married, employed full-time, over the age of 30 and 63% had one or more children. Participants completed a pretest prior to instruction and a posttest following instruction to measure achievement gains. The study was divided into two phases; participants completed a pretest and a posttest for phase I and phase II. A t-test for dependent samples was used to determine if the mean scores on the posttest were significantly higher than the mean score on the pretest for phases I and II. The results of the t-test for phase I indicated that students scored significantly higher on the posttest ($M = 74.63$) than on the pretest ($M = 57.72$; $t=5.56$, $p = .05$). In phase II, students scored higher on the posttest ($M = 80.21$) than on the pretest ($M = 76.84$); however this difference was not statistically significant. Overall, the results indicated that the course was effective. The study concludes with a set of recommendations for designing/teaching an online course for teacher educators.

Introduction

By day, Amado (*not student's real name*) is a full-time, school bus driver in the Rio Grande Valley; by night, he is a college student. In between, he is also a husband and a father of three. Amado was a student in an online course taught by the author at the University of Texas Pan American during the Spring 2004 semester. In the past, Amado would hardly have fit the profile of a typical student, but now, students like Amado are the rule rather than the exception (Choy, 2002). Amado is 42 years old, and he is studying to become a high school teacher. According to the National Center for Education Statistics, students like Amado are becoming more commonplace; 39% of students at higher education institutions are 25 years or older; 40% work full-time and close to 30% have children. Further, nearly 75% of today's undergraduate students are considered ‘nontraditional’ (Choy). Nontraditional students are financially independent;

older than most high school graduates are; work full or part time and are married and have children (Choy).

The increase in the enrollment of nontraditional students is due in part to the overall aging of the population in the United States and a change in the landscape of the labor market (Evelyn, 2002). Large corporate structures, branches of the military, state and federal government departments and organizations have downsized; and, consequently, older workers have been displaced and are now in need of further training and education to compete in the new labor market of the 21st century (Evelyn). A result of the trends in the aging of the population, corporate downsizing and the consequent need for retraining is an increase in the enrollment of nontraditional students (Evelyn). While traditional undergraduates have few distractions and are able to devote most of their time to their classes, nontraditional students work full-time and take care of children as well. In the words of Senator Hilary Rodham Clinton (Lane, 2004), "...they are working hard to finish school, to provide for their families, to do the right thing. And they deserve our support" (p. 6).

One way to support today's nontraditional student is to provide increased access through alternative course delivery methods. Through distance learning technologies, institutions of higher learning can now offer their students more options and make a college degree accessible to all (Carnevale, 2004). Distance learning technologies have made it possible for nontraditional students to learn new skills in the comfort of their own home. Over the last 20 years or more, U.S. schools have embraced distance-learning tools to enhance students' educational opportunities (Carnevale). According to the National Education Association, for the year 2003, 52% of institutions with undergraduate programs offered distance education courses at the undergraduate level (National Center for Education Statistics [NCES], 2003). Further, approximately 3,077,000 students were enrolled in all distance education courses offered by 2- and 4-year institutions, and about 2,876,000 students were enrolled in college-level, credit-granting distance education courses (NCES, 2003). The appeal of online learning is evident; it provides educational access to students who cannot attend classes on campus because of family and/or work responsibilities.

Teacher education programs are among those beginning to adopt online learning as an alternative method of delivery for their students. As the demand for online education increases, educators are in need of guidelines, models and best practices for the design and delivery of online instruction. This article provides teacher educators with guidelines and recommendations for designing online courses along with an illustration of the application of the instructional design process to the development of a specific course for students enrolled in a secondary education program. Further, it also discusses the results of a summative evaluation of the course.

Background

The course was developed at the University of Texas Pan American (UTPA) for the teacher preparation program in secondary education. UTPA is located in the Rio Grande Valley and is approximately 20 minutes from the U.S./Mexico border. UTPA has the highest percentage of Hispanics (87%) among Texas public universities, and the mean age of undergraduates is 23 years old. The course, EDCI 4307: Secondary

Curriculum Internship I, is part of a five-course series that students must complete to become secondary school teachers. The teacher preparation program consists of three 'blocks,' each lasting one semester. Block I consists of three courses, one of which is EDCI 4307. Students must complete the three courses as well as a certain number of hours of field observation for the entire block. In Block II, students complete two courses and spend more time in field observation than in Block I. Finally, in Block III, students complete their student teaching. Because many of the students at UTPA are non-traditional and many live a great distance from the campus, faculty in the secondary program decided to develop online versions of all courses to accommodate these students.

The purpose of this study was to: 1) design a web-based course using WebCT for future secondary school teachers; 2) evaluate the effectiveness of the course; 3) illustrate the use of the instructional design process in designing a web-based course, and 4) provide a set of guidelines for designing web-based courses for other teacher educators.

Method

Subjects

The participants in this study consisted of junior- and senior-level students enrolled in the secondary education, teacher certification program. There were 17 participants in the study 71% were female and 29% were male. In terms of ethnicity, 100% of the participants were Hispanic. All of the participants fit at least one of the characteristics of a 'nontraditional student'. They were all 30 years of age or older, married, employed full-time and 63% had one or more children.

Course Design

According to Dick & Carey (1985), the instructional design process consists of the following components:

1. Identify an instructional goal,
2. Conduct an instructional analysis,
3. Identify entry behaviors and characteristics,
4. Write performance objectives,
5. Develop criterion referenced test items,
6. Develop an instructional strategy,
7. Design and conduct formative evaluation,
8. Revise instruction,
9. Design and conduct summative evaluation.


This section describes the development of the course using the Dick & Carey (1985) model and describes the activities completed at each step in the process.

Identify Instructional Goal. The first step in the process was to determine the course goals and objectives; to do this one must first analyze the needs of the learners. To determine the needs of the students at UTPA, the author referred to the competencies assessed in the Texas Examinations of Educator Standards (TExES). To

become a certified secondary school teacher in the state of Texas, all candidates must graduate from an accredited teacher education program, successfully complete the TExES content area test for their specific subject area and complete the Pedagogy and Professionals Responsibilities 8-12 test. The goals of the teacher preparation program at UTPA are two-fold: to prepare students to function competently in the classroom and to successfully complete the TExES Pedagogy and Professional Responsibilities test. The TExES covers 13 competencies; EDCI 4307 addresses four of the thirteen competencies. Once the competencies to be addressed were determined, it was then possible to establish the goals and objectives of the course. The course was divided into four major units: 1) Human Development; 2) Theories of Learning; 3) Motivation, and 4) Instructional Planning.

Conduct Instructional Analysis. The second step in the instructional design process consisted of analyzing the content to be taught. An instructional analysis involves dividing the content into major areas and for each area asking the question “What does the learner need to know to understand this concept or complete this step.” The content is divided into discrete ‘nodes’ of information by repeatedly asking this question for each content node identified until that particular node cannot be divided any further. The result of this process is a ‘web’ depicting not only the concepts to be taught, but also the relationship among each of those concepts. Each of the major units was divided into three to four lessons.

Identify Entry Characteristics. To design an effective course, a teacher must not only have mastery of the content to be taught but also an understanding of what students already know; this is the third step in the process. To be admitted to the College of Education and the Teacher Education Program in Secondary Education, students must complete all but nine credit hours of coursework in their major. Thus, all participants in the study were juniors or seniors and had completed most of the course work in their major area.

Write Performance Objectives. The fourth step in the process is to write performance objectives, which articulate what students should know or be able to do after a lesson. The course was divided into four major units, and each unit was divided into 16 individual lessons. Performance objectives were then written for each lesson. 

Develop Test Items. Contrary to popular belief and practice, test items should be developed prior to developing the instructional strategy. Because one of the major goals of the course was to prepare students for the TExES, it was important to familiarize students with the types of test items on the actual exam. Thus, both the midterm and the final exam were designed to be similar to the TExES. The test consisted of multiple-choice items, which required students to apply and identify pedagogical principles in the context of actual classroom situations. An example of one item used in the midterm is shown below:

An American government teacher involves his students in a simulated trial to help them understand the American court system. After the activity, he has participants discuss the process from their different perspectives. This strategy best reflects the use of which of the following principles related to human development?

- a. Provide students with practice in hypothetical reasoning
- b. Provide concrete examples to illustrate abstract concepts
- c. Ask questions to assess level of cognitive development

d. Structure learning activities around real-world problems

(Note: the correct answer is option 'd'.)

Develop an instructional strategy. The sixth step in the process involved developing the instructional strategy. Because of the importance of being able to apply abstract pedagogical concepts to real-world classroom scenarios, the author decided to use a case-based approach. The textbook used in the course was *Educational Psychology: Windows on Classrooms 6/E* by Eggen & Kauchak (2004). One of the best features of this textbook is that it provides full-length case studies for instructors to use in the classroom. The case studies in the textbook were incorporated into the course and were a major part of the course.

In terms of the web site for the course, the course interface consisted of eight components, as shown in Figure 1.

Figure 1: Course Web Site



Each of the eight components in the course is discussed in detail below:

- Syllabus: The syllabus contained standard course information such as contact information for the instructor, a listing of the TExES competencies addressed in the course and a description of all assignments and all course policies.

- **Schedule of Activities:** The schedule of activities consisted of a calendar that showed when all assignments were due. The professor used it as a mechanism to tell students what they should be doing in terms of readings and assignments on a weekly basis; it was used to keep students ‘on track.’ Every week students had an assignment to complete, which consisted of reading the case study for the corresponding chapter and answering the study questions for that case study. If a unit contained four lessons, then there were four case studies and four sets of study questions.
- **Course Content:** Each unit in the course consisted of the following three components:
 - a) Course Notes
 - b) Case Studies & Study Questions
 - c) TExES Practice Questions

The course notes corresponded to the readings in the chapter and were a summary of each chapter and the case studies used were those provided in the textbook by Eggen & Kauchak (2004). Finally, the author wrote original TExES practice questions for each lesson. This model was used for each of the 16 individual lessons, and each lesson consisted of a) course notes; b) case studies and study questions, and c) TExES practice questions.

- **Field Observation:** As part of the course requirements, students had to complete 22.5 hours of field observation in a secondary school setting. Students were placed in classes that corresponded to their major and were able to observe a class over the course of several weeks. As part of the observation requirement, students were asked to write a case study similar to those in the textbook and to address the following issues: teacher characteristics; student characteristics; classroom routine; physical environment; classroom management; instructional materials; instructional planning; instructional strategies and assessment. Further, students were required to ‘tell a story’ not simply address each of the issues individually in a list. All of the case study elements had to be incorporated into one cohesive ‘story.’ Students also had to collect four artifacts from their mentor teacher: a list of the classroom rules, a lesson plan, a test and a map of the classroom environment.
- **Email:** Email was used to allow students to communicate with each other and with the professor.
- **Discussion:** Each week a specific lesson was addressed; each lesson included a case study and a set of study questions. Students were required to post their answers to the case study questions to the discussion board. The professor then provided feedback and gave students an opportunity to revise their answers before they turned them in for a grade. The discussion board also was used to allow students to share the case studies they had written with each other. Students were instructed to post their case study to the discussion board; read one other case study and reply to it.
- **Grades:** The grade for the course was based on the following course elements: study questions, the field observation case study, participation in weekly online discussions and a midterm and a final exam.

- **Help:** A help section was provided to assist students with WebCT.

Two elements of the course not shown in the course web site are the midterm and final exam. Both the midterm and the final consisted of 30+ TExES-type, multiple-choice questions. Because of test-security issues, students were not able to complete the tests online and had to complete both exams on campus.

Design and Conduct Formative Evaluation. The seventh step in the process was to design and conduct a formative evaluation. A formative evaluation was conducted, not only, in the initial development phase but also in the two previous deliveries as well.

Revise Instruction. Based on feedback from the students in the first two deliveries, the professor decided to add the schedule of activities to give students more explicit guidance throughout the semester. In addition to adding the schedule of activities, the professor also revised the field observation assignment. Previously, students were required to keep a journal of their field observations and discuss their observations with each other through the electronic discussion board. The 'electronic journal' assignment was replaced by the case study assignment.

Design and Conduct Summative Evaluation. A summative evaluation was conducted based on the third delivery of the course. The results of the summative evaluation are presented in this paper.

Procedure

In terms of the procedure used in this study, students took a pretest prior to instruction and posttest following instruction to measure achievement gains. The study was conducted in two phases; in phase I, students completed a pretest and posttest on units one and two, on human development and theories of learning, respectively. In phase II, students completed a pretest and a posttest for units three and four, on motivation and instructional planning, respectively. A t-test for dependent samples was used to determine if the mean scores on the posttest were significantly higher than the mean scores on the pretest.

Results

Subjects in this study completed two pretests and two posttests. Subjects also completed an instructor evaluation survey at the end of the semester. Sixteen participants in this study completed the pretests, posttests and a survey.

Achievement

Phase I. The author developed the pretest and the posttest. The test was similar to the TExES, the teacher-certification exam used in Texas. The test consisted of 34 multiple-choice items with four distractors each. The reliability of the test was analyzed using the Kuder-Richardson-20 formula (Kuder & Richardson, 1937). The inter-item reliability of the test was .95. With regard to the pretest for phase I, the lowest score was 32 and the highest score was a 76; the most frequently occurring score was 68. The mean for the pretest was 57.72 and the mean for the posttest was 74.63 for phase I of the study. Overall, students increased their scores from pretest to posttest by 17 points

for phase I. A t-test for dependent samples was conducted to determine if the difference between the two scores was statistically significant. Results indicated that students scored significantly higher on the posttest than on the pretest ($t = 5.56, p = .05$). The means, standard deviations and variances for the pretest and posttest for phase I are shown in Table 1.

Table 1: A Comparison between the Means, Standard Deviations, and Variances for Scores on the Pretest and Posttest for Phase I

	n	M	SD	r^2	t
Pretest 1	16	57.72	11.15	124.32	
Posttest 1	16	74.63	7.81	61.00	5.56

* $p < .05$

Phase II. In terms of the results for phase II, the data did indicate an increase in scores from pretest to posttest; however, it was not statistically significant. The mean on the pretest 76.84, and the mean on the posttest was 80.21. The results of phase II are shown in Table 2.

Table 2: A Comparison between the Means, Standard Deviations, and Variances for Scores on the Pretest and Posttest for Phase II

	n	M	SD	r^2	t
Pretest 2	16	76.84	13.10	171.61	
Posttest 2	16	80.39	9.84	96.83	1.41

* $p > .05$

Student Satisfaction Ratings

At the end of the semester, participants completed a Student Opinion Survey of Course/Faculty. This survey is given routinely in all classes at UTPA to assess student satisfaction. Participants rated several aspects of the course according to the following rating scale:

- 5 – Excellent
- 4 – Good
- 3 – Average
- 2 – Fair

- 1 – Poor

The mean rating for each item is shown in Table 3.

Table 3: Average ratings on Student Opinion Survey of Course/Faculty

Question	M
Overall rating as an instructor in this course	4.17
Explanation of subject matter in this course	4.58
Availability for help online	4.25
Clarity of communications in lecture	4.08
Encouragement of students to ask questions	4.42
Encouragement of students to express ideas	4.75
Acceptance of disagreements with students	4.58
Interest and enthusiasm in the subject by the instructor	4.50
Courtesy to students in the course	4.75
Pertinence of assignments to subject matter in this course	4.75
Comments on assigned work	4.58
Advance notice of major exams	4.42
Explanation of grading procedures	4.42
Application of announced grading procedures	4.42
Clarity of assignments	4.25
Enthusiasm with which you would recommend this instructor to other students	4.25
Professional level maintained by the instructor.	4.58

As the data indicate, participants rated all aspects of the course from “Good” to “Excellent.” The highest rating was 4.75 and the lowest rating was 4.08. Overall, the data suggested that students were satisfied with the course.

Students, also, were asked to answer several free-response questions on the survey; representative responses to these questions are shown below.

Question 27: What single aspect of this course did you like the most?

“Everything!”

“The book and the assignments”

“The convenience”

“The fact that the class was online”

“I like that we are able to take it online. Since I work at a school district, it is hard to take classes during the school day.”

“I enjoyed the freedom of doing my coursework online.”

“I liked the fact that I was able to do all my work from home. It was self explanatory and very interesting.”

“I liked the teacher”

Question 28: What do you think of the instructional methods used in this course?

“Excellent!”

“I feel that the teacher did a great job of instruction.”

“I think they worked very well, and would recommend this class to others.”

Question 29: What do you think of the following aspects of the course? a) textbooks; b) assignments and c) examinations

“Very useful”

“The course is excellent, the assignments are not too bad, it just takes a lot for reading”

“Excellent”

“Examinations - covered all material previously read.”

“The textbook was excellent. The assignments were good and the exams were very useful being that they pertained to the TExES.”

“Textbooks: besides expensive, very interesting assignments, informative examinations, difficult, but will help prepare for the TExES.”

Question 30: What difficulty, if any, did you experience in completing the required work? Explain.

“None”

“Time constraints, due to taking an additional six hours in education”

“I just did not have too much time to finish due to my work schedule”

Question 31: What changes, if any, would have enabled you to gain more from this course?

“No changes”

“A study guide for the tests”

“More communication between the instructor and students”

Question 32: Were you motivated to work for a higher level of skill and/or knowledge in this subject by the instructor? Why or why not?

“Yes, the instructor very helpful and courteous, and she provided a warm environment for learning.”

“Excellent class”

“Yes, I was motivated to work harder. When you’re not provided with face-to-face instructions, you have to work harder to get the answers independently.”

“Yes, the discussion questions were challenging”

“Yes, she was very interested in her subject matter and she motivated me to learn”

Question 33: Did you feel that the instructor was interested and enthusiastic about the subject field? Why or why not?

“Yes, very enthusiastic”

“Very enthusiastic and an excellent motivator”

“Yes, she seems to enjoy what she teaches”

Question 34: What do you think of the evaluation methods used by this instructor?

“Good”

“Great”

“They were fair”

“Pretty clear and concise”

Question 35: How could this instructor improve his/her teaching effectiveness? Explain.

“Doesn’t need to improve”

“Very effective instructor and always willing to help”

“Excellent methods”

“Greater use of the course calendar”

“Consistency, clarity of assignment and their due dates.”

“Like mentioned before, more open communication and quicker responses to questions.”

Question 36: Do you think the stated course objectives were achieved?

“Yes”

“Most of them were achieved”

Question 37: Other comments?

“Great class”

“Learned alot of knowledge from this course”

“I wish Ms. Pena would teach other courses”

“Excellent class. I truly enjoyed the positive comments given by the professor. It motivated me to work harder. Thank you for the positive attitude”

“All in all I really enjoyed the class, and the online arrangement made my life alot easier and more organized.”

Overall, the results of the Student Opinion Surveys indicated that participants perceived the course to be effective and a worthwhile experience. Although there were a few negative comments, the majority of the student comments suggested that students were satisfied with the course.

Discussion

Achievement

Collectively, the results of the pretests and posttests and the student opinion survey suggest that the course was effective in helping students meet the stated objectives. In terms of the results of phase I, scores on the pretest and posttest increased from 58 to 75 (% correct). The difference between the two scores was significant ($t = 5.56, \alpha = .001$) indicating that the course was successful in helping students acquire knowledge and skills related to human development and theories of learning. The data for phase II of the study were not quite so encouraging; scores increased from 77 to 80 (% correct) from the pretest to the posttest, respectively; however, the difference between the two scores was not statistically significant. However, there is one major caveat to this finding. Although the difference between the scores on the pretest and posttest was small, the scores on the pretest for phase II were higher than they were for

phase I. There are several possible reasons for this finding. First, and most obviously, the second test may have been easier than the first one. The average pass rate (p) for the items in the second test was 80%. Thus, it is likely that the test was less difficult. Given this finding, the next question to be considered is, “Why was the test easier?” It may have been that the distractors were less effective; however, it is also likely that the results of the instruction were cumulative. A major part of performing well on the exams is learning effective reasoning strategies. The tests required students to apply critical thinking skills. Quizzes were given for every lesson to enable students to practice their reasoning skills. The practice quizzes contained items very similar to the items used in the midterm and the final. The online quizzes provided error-contingent feedback, that is, students found out not only what questions they answered incorrectly, but also why. Further, students also practiced using their critical thinking skills by analyzing full-length case studies of actual classroom scenarios. Therefore, while the improvement in test scores from pretest to posttest was smaller for phase II of the study, the scores on the pretest for phase II were higher than they were on the pretest for phase I suggesting that students learned to use more effective, reasoning strategies in a cumulative manner.

Student Perceptions

The results of the student opinion survey indicated that participants perceived the course to be effective; the mean student satisfaction rating was 4.46 on a five-point scale (5 = Excellent, 1 = Poor). All of the participants rated the course as being “Good” to “Excellent.” When asked to comment on specific aspects of the course, many students said that one of the most positive aspects was the convenience of taking the course online. Students also commented positively on the instructional strategies used, the enthusiasm and interest of the instructor and the assessment methods used. When asked what changes they would make to the course, students mentioned that they would have liked more communication between the instructor and the students and they would have liked the instructor to use the online calendar more to help students manage their time and complete assignments on time. Although students were given a hard copy of the schedule of activities, they indicated that they would have liked to see the due dates on the calendar as well. The comments made by students regarding the calendar affirmed the critical importance of the calendar, and they also highlighted one of the challenges of online learning. Although students must be disciplined when taking an online course, instructors must also be disciplined and able to manage their time wisely. One of the potential pitfalls of teaching an online class is falling prey to the truism “Out of sight, out of mind.” Because the class does not meet on a regular basis, instructors must be careful about remembering to post information and communicate with students. Further, online courses are more time consuming to deliver because of the need to keep abreast of email and facilitate discussions. Nearly all of the communication is text-based, which is, in itself, time consuming. Despite a few shortcomings, the results of the study suggest that the course was successful. It is important to consider both the positive and negative attributes of the course so that others may learn from the author’s experience of designing and teaching an online course.

Positive Attributes of Course

Considering the overall success of the course, there are several factors that may have contributed to its effectiveness.

Well-organized. One of the positive characteristics of the course was its structure and organization. The course consisted of four different units:

- Unit 1: Human Development
- Unit 2: Theories of Learning
- Unit 3: Motivation
- Unit 4: Instructional Planning

Each unit was divided into three major sections:

- Course Notes
- Case Studies & Study Questions
- TExES Practice Questions

The three course components were divided into individual lessons or sections. The structure of the first unit is shown below:

Unit 1: Human Development

Course Notes

- 1.1 Cognitive Development
- 1.2 Social and Emotional Development
- 1.3 Learner Differences

Case Study Analyses

- 1.1 Case Study Analysis
- 1.2 Case Study Analysis
- 1.3 Case Study Analysis

TExES Practice

- 1.1 TExES Practice
- 1.2 TExES Practice
- 1.3 TExES Practice

Students knew what to expect for each lesson because each lesson had the same basic structure.

Interface Design. Interface design is an important attribute of an online course because it determines how easily students will be able to navigate the course. In designing the course, the author followed a few guiding principles. First, the design was simple. The web site for the course consisted of eight different elements:

1. Syllabus
2. Calendar
3. Course Content
4. Field Observation
5. Email
6. Discussions
7. Grades
8. Help

Although it can be tempting to use every icon in WebCT, the use of too many screen elements can overwhelm students and make it difficult for them to find

information. Second, the course was easy to navigate because all of the course content was in one section. Students did not have to read course notes in one section and then complete another assignment in a different section. All of the required material for each lesson was under that one lesson. Third, the instructor used the announcement area to “talk” to students publicly on a regular basis. The announcement area is on the homepage of the course and thus one of the first items visible to students.

Realistic Workload. Because professors are not limited by time and space in an online course as they are in classroom-based courses, it can be easy to lose sight of what students can realistically accomplish in one class period. To keep the workload realistic, the length of each lesson in the online course was identical to the length of each lesson in the classroom-based course. This ensured that students could realistically complete the required work in one sitting or session.

Internal Consistency. The high degree of internal consistency among the course objectives, content taught and assessments was a result of the use instructional design principles. The objectives were based on a needs assessment of the target audience, thus ensuring the relevance of course material. The content taught was based on the objectives of the course, and, finally, the assessments used were based on the content taught.

Appropriate Use of Tools. When designing online courses, instructors must ensure that they use the various tools in an appropriate manner. For example, if a question has a clear right or wrong answer, it is not appropriate for use in a discussion board because there is no real discussion required. The most effective use of discussion forums are for questions that are open-ended or controversial. Discussion boards also allow students to share unique experiences. During field observation, the participants in this study observed different teachers in different classrooms; the discussion forums allowed students to share their experiences with each other, which they would not have been able to share in class due to time limitations.

Familiarity with Tools. Upon final reflection of all of the factors that contributed to the success of the course, one of the factors that made the most significant impact was the training that the author received in WebCT through the Center for Distance Learning (CDL) at the University of Texas Pan American. Before an instructor can teach a course online, CDL requires instructors to complete a three-step process. First, instructors must have taught the course as a classroom course. Second, instructors must complete a six-week workshop on designing and teaching an online course. Third, they must augment the classroom-based course using WebCT tools and teach it as an ‘augmented’ course. After completing the three requirements, instructors are allowed to teach the course exclusively online. The process used by CDL not only provides instructors with formal training in the use of online tools, but it also gives instructors a gradual introduction to teaching online. The training provided by CDL greatly contributed to the author’s comfort level in teaching the course and minimized the stress associated with teaching online for the first time. If a university is truly dedicated to online learning, it must provide faculty with online tools that are easy to learn and use and it must provide training in how to use these tools. In selecting WebCT as the authoring tool, CDL provided tools that were easy to use and accessible.

Conclusion

Based on the results of this study, the following recommendations are offered to educators considering the prospect of designing and teaching an online course:

1. Use the principles of instructional design for course development. For any course to be successful, online or otherwise, it must be designed in a systematic manner based on the needs of learners. The use of instructional design principles ensures a high degree of internal consistency among course objectives, content and assessments.
2. Group similar tools together. When designing an online course, instructors need to make the course easy to navigate. Grouping similar tools together makes online courses easier to navigate and use. The primary types of tools used in WebCT are course content tools, communication tools, assessment tools, and student tools (grades and progress). Tools should be grouped into these major categories to facilitate course navigation.
3. Use a course calendar to pace students. The first time the author taught an online course, she held a meeting at the beginning of the semester to discuss students' needs and expectations. One need students voiced was a mechanism to help them keep abreast of all assignments. They appeared to have anxieties related to the need for self-discipline and expressed concern over getting lost in Cyberspace. Based on the students' input, the author decided to use the course calendar feature to 'keep students on track.' The calendar not only listed due dates, it also provided instructions on what students should be doing each day to make sure that they were meeting all of the due dates. It broke larger projects down into smaller parts to prevent students from falling behind. If students followed the calendar, they did not have to worry about completing course requirements on time. The intent of the calendar was to provide students with a feeling of security.
4. Place all course content in one section. By placing all course content under one icon, students did not have to navigate to different parts of the course to read materials, obtain instructions on how to complete assignments and complete assignments.
5. Use a similar structure for all course modules. If one common structure is used for all lessons, then students know what to expect and do not have to learn a new framework for each lesson.
6. Answer emails promptly. Although it may be difficult at times to answer emails promptly, it is particularly important to be timely when teaching an online course because it is the primary means of communication between the instructor and students. Further, promptness in answering student emails significantly contributes to student satisfaction in an online course. In general, instructors should answer emails the same day they are received and should check email on a daily basis. Further, it is important to let students know when emails will be answered and whether or not the instructor will check email on the weekends; otherwise students may develop unrealistic expectations.
7. Keep it simple. To facilitate the navigation of an online course, it is important to keep the design as simple as possible. Consider the tasks you need to accomplish then consider the tools most appropriate for that task, and use only those tools you need.

8. Give yourself time to learn how to use the online tools. Like anything else, learning to teach online is an acquired proficiency. It may be unwise to use chat rooms, discussion boards and presentation areas all at once. Instructors should add tools and features gradually as they become more familiar with them.
9. Use tools appropriately. In selecting tools, instructors need to consider the purpose of each tool. Not all topics, assignments or activities lend themselves to a discussion forum or a chat room.
10. Build a sense of community. Finally, because of the anonymity in online learning environments, instructors must make an extra effort to build a sense of community and cohesion into the course. One way to build a sense of community is to take students' pictures the first day of class during an initial face-to-face orientation session, then post student pictures and names to the course web site. Also, instructors can plan optional social activities such as having optional 'movie nights' once a month. Social activities give students and the instructor an opportunity to build rapport and help them to become comfortable with one another.

By following the above recommendations, instructors who are considering teaching online can increase the probability of a successful experience; however, just as with all new endeavors, there is an element of risk associated with teaching online for the first time. Educators must prepare themselves to teach online, and then simply embrace the risk of teaching online and follow the recommendation of the famous Nike commercial and "Just do it," for it is in doing that one learns.

References

- Carnevale, D. (2004). Distance education: Keeping up with exploding demand. *The Chronicle of Higher Education*, 50(21), B8.
- Choy, S. (2002). *Nontraditional undergraduates: Findings from "The Condition of Education, 2002."* Retrieved July 29, 2004, from <http://nces.ed.gov/pubs2002/2002012.pdf>
- Dick, W., & Carey, L. (1990). *The systematic design of instruction* (3rd ed.). Glenview, IL: Scott Foresman.
- Eggen, P. & Kauchak, D. (2004). *Educational Psychology: Windows on classrooms 6/E*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Evelyn, J. (2002). Nontraditional students dominate undergraduate enrollments, study finds. *The Chronicle of Higher Education*, 48(40), A34.
- Kuder, G.F., & Richardson, M.W. (1937). The theory of estimation of test reliability. *Psychometrika*, 2, 151-160.
- Lane, K. (2004). Sen. Clinton unveils plan to help nontraditional students. *Black Issues in Higher Education*, 21(2), 6.
- National Center for Education Statistics. (2003, July). *Distance education at degree-granting postsecondary institutions: 2000–2001*. Retrieved May 2, 2004, from <http://nces.ed.gov/pubs2003/2003017.pdf>

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