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Reflections of Evaluating Web-based Courses: A Case Study

Deepthi (Dee) Werapitiya, Jennifer Drez, Jerald L. Rounds
University of New Mexico

Abstract
This paper explores the methods and process of evaluating two web-based courses, which form part of the Construction Advancement Institute (CAI) Certificate program for the construction industry. The CAI program was designed to enable practicing construction professionals to take the core construction courses offered at the University of New Mexico through a professional development track, rather than an academic track. A companion paper entitled *Taking Construction Education to Practicing Professionals: A Case Study* has been submitted for presentation at this conference discussing the evolution of the CAI program.

The two courses under study are Construction Safety CE 475/575 and Methods Improvement CE 479L/579L both offered by the Civil Engineering Department. These two courses have been offered in a traditional mode for many years, but were offered fully online for the first time in spring 2003 using the WebCT platform. A majority of the students enrolled in these courses are practicing professionals in the construction field.

This case study begins by describing the evaluation methods developed for CAI courses. The first evaluation step was to conduct an initial instructional design evaluation of the two courses. In the spring 2003 semester, Midcourse surveys were offered to assess the effectiveness of the course design and content. The analyses of the results of the Midcourse surveys indicated some revisions and changes were necessary to improve the two courses, which were incorporated when the courses were offered in the following fall of 2003. As part of the commitment to improve these courses and to cater to the particular needs of the students who participate in them, a Pre-course and Midcourse survey were offered in the fall 2003 semester. The paper will examine whether changes implemented through the use of the Midcourse surveys improved student satisfaction from one semester to the next.

Finally, implications and suggestions for future course design and evaluations are also discussed.

History of the Construction Supervisor Certificate Program

The University of New Mexico (UNM) in partnership with the Albuquerque Technical Vocational Institute and the Construction Advancement Institute (CAI) launched a fully online professional Civil Engineering certificate program in the fall of 2002. The Construction Supervisor Certificate (CSC) program was created based on projected demands in the construction industry, as tracked by CAI. The professional certificate requires a total of thirty (30) credit hours for completion, and includes lower and upper division courses. The upper

division courses overlap with UNM's academic degree programs. The target student audiences for these online courses are professionals already working in the construction field and existing UNM Civil Engineering students.

The courses for the program were introduced into the online environment with a phased approach. The first course, Principles of Written Construction Documents, was piloted in the spring of 2002. This course was used as a test case for course design and evaluation methods. Lessons learned from this course were integrated into the design of the two courses discussed in this paper.

This paper discusses the evaluation techniques used for this online delivery program. In particular, it looks at the case study of two courses taught by Professor Jerry Rounds of UNM: Construction Safety and Methods Improvement.

Course designers felt it was important to integrate evaluation methods upfront not only because of the newness of the online course delivery format for engineering courses, but also the need to measure the effectiveness of the design and implementation (Picciano, 2001, Moore & Kearsley, 1996)[1]. Moreover, it was determined that evaluative instruments will provide information about the effectiveness of the online teaching and learning environment as well as the platform (WebCT) and related technologies used to deliver the course. Formative evaluation in the form of Pre-course surveys (offered in the fall semester) and midcourse surveys, as well as summative evaluation in the form of final course surveys, would be used to determine the effectiveness of these courses. The intent was to ensure curriculum quality and create mechanisms to receive feedback from students in a timely manner. In addition, it was desirable to make certain the courses were meeting North Central Association's (NCA) distance education accreditation requirements.

Course Design

Both courses were designed within the UNM WebCT course management system. The UNM New Media & Extended Learning Course Development group developed some templates to aid in course design. The following templates were utilized for these courses.

- Syllabus template – A detailed syllabus (10 pages) was provided outlining all the logistics, technical requirements as well as academic course expectations. This document described the course layout and served as a roadmap for students to know how to succeed in the course.
- Tutorial module – The first week of the online course is focused on getting students comfortable with the WebCT software environment. A special module was designed to step them through the use of standard WebCT tools, such as the Discussion, Assignments, Email, and Quizzes, to help build online community and provide the instructor with needed information. For example, they used the Discussion tool to introduce themselves, and used the Assignment tool to submit a short paragraph on their academic background and what they hoped to get out of the course.
- Pre-course survey and quiz – These were first administered in the fall of 2003 to serve multiple purposes: a) to collect demographic information about students, b) collect computer-use information about the students to assist with troubleshooting technology

problems, and c) to serve as a means to record their agreement on class, privacy, and copyright policies.

- Midcourse survey – A student satisfaction survey was administered after the mid-point of the course to poll students on their online course experience. The content and outcomes of these surveys will be discussed later in this paper

Course content was centered on an appropriate textbook supplemented by PowerPoint presentations. The primary assessment methods included the use of weekly quizzes, written assignments that were peer critiqued and hosting a discussion using the Discussion tool. The written assignments were generally scenario-based where students had to apply the concepts and theories learned from the class in a case study format. In addition to submitting these assignments for review by the instructor, students would also post them to the Discussion area for other students to review. All students were required to prepare a short critique of other students' assignments. Students were also assessed on their participation in the discussions.

In effect, the instructor served primarily as a facilitator and was not the only disseminator of information and feedback. Students were able to apply what they learned directly to case studies in their workplace and get feedback from their peers. This type of constructivist course design is recommended by distance learning theorists (Jonassen et al, 1995; Wilson, 1996)[2] both because of the nature of the course delivery method and the types of learners (in this case primarily graduate students and working professionals.)

The two courses are part of a curriculum accredited by two different accrediting bodies – namely, the Accreditation Board for Engineering Technology (ABET) and American Council for Construction Education (ACCE). However, the new web-based format requires an additional accreditation review focusing on the online format. The courses were first reviewed based on the guidelines provided under the NCA's Best Practices for Electronically Offered Degree and Certificate Programs. These guidelines are used for accreditation of electronically delivered academic programs offered through colleges and institutions. Specific attention was paid to curriculum design and instruction, faculty support, student support, assessment and course evaluation. The initial review took place in March 2003, midway of the spring 2003 semester.

As a preliminary, the two courses were reviewed to identify elements of the course structure and instructional strategies. Also, an initial evaluation was conducted of the courses in meeting distance learning theory and principles. The following is a summary of the initial observations.

> The course description and objectives were well articulated and the course prerequisites outlined clearly the academic and hardware and software requirements. Students' attention was also drawn to technical assistance contact information. The detailed syllabus was informative and provided details on the University policies, course description and objectives, course prerequisites with respect to academic, hardware and software requirements, assignments and grading criteria.
>
> Course content was presented in fifteen (15) and sixteen (16) modules for the spring and fall courses, respectively. Each module was made available for a two-week time period.

The instructor's intention was to guide the students through the content and course material at a regulated pace.

It was noted that there were three areas for communication and interaction under Discussions, Chat and Email tools. It was anticipated that the students would make use of the ample opportunity to interact with each other and the instructor through these tools.

It was observed that there were requirements for students to host a discussion on a topic of interest in the Discussions section, as well as commenting on each other's assignments posted in this section. Peer assessment of assignments is viewed as a valuable tool to encourage an exchange of ideas and ''learning" from each other. In a constructivist learning environment, the sharing of ideas not only leads to self-evaluation but also promotes building on existing knowledge to incorporate new knowledge (Piaget, 1954; Vygotsky, 1981; Von Glaserfeld, 1989)[3].

Also, support was provided to the students on using WebCT through the PowerPoint presentation entitled Session Zero/Getting Started with WebCT, which was a detailed orientation to using WebCT. In addition, the Getting Started section under the syllabus, directed students how to proceed through the course. Several support devices were embedded in the course to assist students in optimizing their learning experience (Bastiens & Martens, 2000)[4]. Some of these support devices took the form of templates such as the syllabus and tutorial module for orientation with WebCT.

Due to the evaluation of the two courses taking place towards the latter part of the semester, the midcourse survey was posted in the courses on April 17, 2003 and was available until the end of the spring semester. With respect to the timing and placement of the survey, it took the form of a final survey rather than a midcourse survey. The survey was anonymous and consisted of twenty-three (23) statements and questions. Many of the items provided students the option of ranking given statements in the survey according to the following scale: Strongly Agree, Agree, Disagree or Strongly Disagree. A copy of the survey can be found in Appendix A of this paper. The survey focused on student demographics, course structure, navigation, interaction, instructor support and feedback, effectiveness of the course activities, the WebCT software and technical issues. Based on the results of this midcourse survey, the instructor incorporated several changes to the courses offered in the fall 2003 semester.

Key Findings of the Midcourse Surveys for the Spring 2003 Semester and Changes Implemented in the Fall 2003 Semester

The following is an outline of the student responses and concerns expressed in the spring 2003 Midcourse surveys and the measures taken to improve and enhance the learning outcomes in the fall 2003 course offerings.

Quizzes

Findings: Survey responses indicated that students preferred that previous quizzes be accessible for review purposes and that the timing of each quiz be increased from fifteen (15) minutes to twenty (20) minutes. A recommendation was also made to post the corresponding chapter number for each quiz.

Changes in the fall 2003 courses: The quiz timing was increased from fifteen (15) minutes per quiz to twenty (20) minutes each. Also, previous quizzes that students have already taken were made available for review throughout the semester. In addition, the deadline for quiz submission was extended to accommodate individual students experiencing technical difficulties in accessing a quiz.

The corresponding chapter numbers were also placed with the relevant quiz number at the heading of each quiz.

Course Content
Findings: The two-week availability of course content was noted as being insufficient due to business travel required of many students who are professionally employed.

Change in the fall 2003 courses: In response to the above-noted concern, the course content for each unit was made available for three weeks.

Course Navigation
Findings: A few students indicated that the site was a bit confusing and that navigating through the site was somewhat difficult.

Change in the fall 2003 courses: An introductory e-mail message was sent to each student describing the course tools and providing directions on accessing the weekly course content and assignments.

Interaction/Discussions
Findings: Interactive discussions were viewed as one of the least useful resources on the course site. Students also requested that tighter time constraints be placed on the selection of discussion topics and posting of reports.

Change in the fall 2003 courses: In order to enhance interaction in the courses, the fall semester offered virtual classes using the Chat tool, twice during the semester. Student participation in these discussions counted towards 10% of the course grade. Also, a time limit was imposed on the discussions under the Discussion tool during the fall semester.

Assignments
Findings: The surveys revealed that the assignments were excellent and challenging and were ranked first and second in the category of the most useful resource for learning course content. Also, student critiques of each other's assignments were found to be a valuable learning tool.

Change in the fall 2003 courses: In view of the positive reviews, the assignment activities and student critiques of assignments were continued in the fall semester.

Midcourse Surveys for the Fall 2003 Semester

As part of the commitment to improve the course evaluation tools, the Midcourse survey underwent revisions prior to being made available for the fall 2003 courses. Many of the questions dealing with the demographics and assessment of technical capabilities were taken out of the previous Midcourse survey, and were made part of a Pre-course survey that was offered at the beginning of each course. Also, several new questions were included and the wording of some of the questions was changed with a view to improving the survey and collecting better data. The revised Midcourse survey consisted of twenty-six (26) statements and questions and can be found under Appendix B of the paper.

The additions introduced in the survey pertained to where students had taken previous online courses, the assessment of assignments, the value placed on interaction with peers, identifying the WebCT features difficult to use, the technical assistance received with respect to WebCT software problems and the resources used to learn how to use the software. These specific additions can be found under Appendix C of the paper.

The Midcourse surveys were made available in the two courses under review from October 20, 2003 to October 26, 2003.

Comparison of the Spring and Fall Survey Results

Since the two surveys were not identical, a straight comparison will not be undertaken. Instead, we will focus on the perceived changes in student satisfaction with respect to the courses and their related activities.

The total number of students enrolled in the Construction Safety and Methods Improvement courses for the spring semester was twenty-one (21) and eighteen (18), and in the fall semester, fourteen (14) and six (6), respectively. It was noted that in the fall semester, the response rates dropped from the spring semester of 57% (Construction Safety) and 66% (Methods Improvement) to 50% and 33%, respectively. This drop could be partly attributed to the fact that the surveys in the fall were offered for one (1) week, while in the spring they were offered for over a three-week period.

The Most Useful and Least Useful Resources

There were no marked changes in student perceptions of the most useful resources for learning the course content from one semester to the next. The textbook and assignments were chosen as the most useful resources in the spring semester while in the fall semester the choices ranged from the textbook, assignments, quizzes, interactive discussions with instructor and other students to homework problems.

The least useful resources were noted as online documents, quizzes, assignments, and textbook for the spring semester while for the fall semester the choices were quizzes, interactive discussions with other students, video clips, homework problems, textbook and assignments.

It was observed that some of the students in the fall semester misunderstood the question with respect to the most useful and least useful resources for learning the course content. While the

survey specified that students pick only those resources pertaining to their course, some students picked video clips and homework problems, which were not part of either of these courses.

Interaction
Both spring surveys indicated that a majority of the students agreed with the statement that they had sufficient interaction with the instructor (with the exception of one dissenting). However, for the fall surveys, the opinions were split with some students in the Construction Safety course disagreeing with this statement. These surveys also indicated that they valued the interaction they had with their peers. (The question on ranking the value placed on peer interaction was introduced only in the fall 2003 survey).

The fall surveys revealed, however, that the students were not satisfied with the level of interaction they had with their peers. In contrast, the spring 2003 surveys revealed students agreed with the statement that they had sufficient interaction with their peers (with the exception of one dissenting). The dissenting opinion indicated that the discussions with other students were not helpful in the course. Another commented that an orientation to the online class format was required for students to be comfortable with it. While this respondent liked the online discussions, it took a while for him/her to get used to taking part in these discussions.

The fall surveys consisted of a variety of suggestions for improving the course design such as including one or two face-to-face meetings for students to get to know each other and to meet with the instructor, and for more discussions to be part of the course. Another comment noted the convenience of taking an online course as far outweighing the benefits of the face-to-face interaction found in an in-class course.

Instructor Feedback and Facilitation
The two surveys revealed student satisfaction with the level of instructor assistance and facilitation in the courses. Students were also of the view that the feedback from the instructor was timely.

Course Material and Activities
Survey respondents for both the spring and fall surveys were in agreement that the course material was varied enough to keep the students engaged in the courses.

The spring survey responses overwhelmingly supported the assignments and their formats over the quizzes. Comments such as “excellent” and “learned a great deal from each one” were made with respect to the quality of the assignments. In the fall survey for the Construction Safety course, suggestions were made to improve the assignment formats, by eliminating two and three-part assignments due to the difficulty of keeping track of them for peer review purposes. Also, in the Methods Improvement course, suggestions were made to provide more group assignments and to provide more time to submit these group assignments.

However, with respect to the quizzes, both surveys noted similar dissatisfaction over the quality and the wording of the quiz questions. In the spring surveys, the quizzes were not viewed as contributing much to the learning process when compared to the assignments. While some respondents noted that they were fair and organized well, others complained that they were too

short. Also, some were of the opinion that the wording of the quizzes should be much clearer and the correct answer should not hinge on minor words that could be easily missed.

Similar comments were echoed in the fall surveys with respect to the quizzes.

Course Navigation
A majority of the respondents agreed that it was easy to navigate the course layout. A few noted that the site was confusing.

Facility using WebCT and Technical Issues
Both surveys indicated that the respondents were comfortable using its many features such as the Discussion tool, Email, Chat, Syllabus, Calendar, Quizzes, Course Content, Grades and Student Web Pages. However, some identified features such as the Quiz, Discussion Tool, Email, Chat, Course Content, Grades, Assignment Drop Box and Student Web Pages as being difficult to use.

Similar technical issues were encountered by the respondents of both surveys. The most common included problems downloading files, slow access, and network firewall issues. Several respondents also indicated that they did not encounter any problems using WebCT.

Findings from the Comparison of the Spring and Fall Surveys
Overall, a comparison of the results of the two surveys did not indicate any striking improvements from spring to fall. One area of concern that surfaced in the fall surveys is the view that there was insufficient student-student interaction in both courses. In both surveys, students were consistent in their approval of and satisfaction with the assignments and dissatisfaction with the quizzes. There were a mix of comments with respect to the different activities, course material, technical issues and assistance. However, no definitive conclusions can be drawn from the comparison of the survey results that point to improved overall student satisfaction of the two courses from one semester to the next.

Implications for Future Course Design and Evaluation

The authors wish to refine the wordings of the survey questions/statements to ensure that students' understanding of key words are what was intended by the survey designers. In this respect, a definition of words such as 'interaction' and 'prompt' should be provided so that students have an understanding of what they are evaluating in relation to the survey. For instance, the courses offered opportunities for interaction via the Email, Discussion and Chat tools. However, it is unclear whether students took into consideration the use of all three tools when evaluating the level of interaction in the courses.

Interactive activities should continue to be promoted and encouraged in future courses to enhance student satisfaction and learning outcomes. Interaction is considered a key component of online instruction and vital to effective learning and information exchange (Anderson, 1987; Keegan, 1990)[5]. According to Moore (1989)[6,] student-content, student-instructor and student-student interactions are essential in a distance education context. The Discussion and Chat tools should be the focus of student-instructor and student-student interaction, inviting student reflection and dialogue. It is also recommended that a space for student social interaction be

provided in the form of a virtual student café. It is anticipated that opportunities for student collaboration will also be offered in the form of group projects and assignments. In constructivist learning environments, student collaboration will provide for student engagement with one another and also lend to learning from one another (Jonassen, 1999)[7].

The assignment requirement that students not only upload their assignments to the instructor, but also post them in the Discussion area for other students to view and critique was valuable. These critiques allowed for appreciation and evaluation of different views and perspectives. It is unfortunate that the assignment on hosting a discussion topic did not materialize, as it would have afforded students excellent practice not only in participating in discussions but also in facilitating them.

It is surmised that since the online learning environment is relatively new for these two courses, students need to get more accustomed to the online format. The two courses have been offered fully online only for the two semesters under review. One of the courses, Methods Improvement was offered in the fall of 2002 in a hybrid format, with face-to-face classes supplemented by online activities. Even though the surveys revealed that well over 50% of the students had taken prior online courses, it cannot be ascertained what format these online courses took and cannot be compared to the two courses under study. We anticipate that as students get more comfortable with the online environment and appreciate the learner-centered design of the courses, there will be a corresponding increase in participation in the online activities.

This view is also confirmed by the fact that in both fall surveys, students identified the Discussion tool as one of the most difficult to use features of WebCT. In particular, participating in discussion forums by posting comments publicly could be daunting and uncomfortable to many. Most importantly, students need to understand the value and importance of critical reflection and engaging in dialogue as an important part of the learning process. Also, students need to value and appreciate the learner-centered approach of the online format as opposed to the traditional classroom setting, where the instructor has more control and is regarded as the sole disseminator of knowledge.

The writers are also of the opinion that it would be beneficial to conduct focus groups or individual interviews to obtain a better understanding of student reactions to the courses. For instance, it would be helpful to determine the reasons for student perceptions of difficulty associated with the use of the Discussion tool.

When considering the mixed reactions to the level of interaction perceived in the courses, it must be kept in mind the diverse personalities, ages and learning styles of the students. Those who are self-directed may prefer less interaction than others. Since many of the students in these two courses were working professionals, the need for a higher level of interaction may not have existed (Kearsley, 1995)[8].

Conclusion

The findings from the midcourse surveys have proven to be extremely valuable in providing directions for improving course design and content. Final course surveys will also provide additional information with respect to student views of the effectiveness of the two courses. It is

our expectation that future evaluations will continue to result in further improvement and fine-tuning of the course design and instructional activities which will lead to enhancing student satisfaction and learning.

Appendix A

1. Is this the first online course you have taken?

a) Yes
b) No

2. Please select all that apply as to how you access this course:

a) In-State
b) Out-of-State
c) Home
d) Work

3. Please select all the applicable reasons you are taking this course:

a) Required for degree
b) Elective for degree
c) Non-degreed student
d) Obtaining a Certification
e) Updating skills for job/career

4. Which resource do you use as a primary guide for knowing what it takes to be successful in the course?

a) WebCT Syllabus & Calendar
b) One-on-one discussions/emails with Instructor
c) Feedback on assignments and quizzes
d) Emails/Bulletin Board Postings from instructor to entire class
e) Other, not listed above

5. The sequencing of the course is designed well.

a) Strongly Disagree
b) Disagree
c) Agree
d) Strongly Agree

6. Which of the following resources do you find MOST useful for learning course content? Pick up to two choices.

a) Textbook
b) Video Tapes
c) Online Documents
d) Quizzes/Exams
e) Assignments
f) Interactive discussions/emails with other students
g) Interactive discussions/emails with instructor

7. Which of the following resources do you find the LEAST useful for learning course content? Pick up to two choices.

a) Textbook
b) Video Tapes
c) Online Documents
d) Quizzes/Exams
e) Assignments
f) Interactive discussions/emails with other students
g) Interactive discussions/emails with instructor

8. I feel the course materials and assignments have enough variety to keep me engaged.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

9. The content of the course is well laid out on WebCT and is easy for me to navigate through.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

10. The Instructor provides clear direction(s) for the course.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

11. The instructor is helpful and complete in answering questions I have.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

12. I am having sufficient interaction with the instructor.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

13. I have sufficient interaction with the other students in this class.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

14. Please describe any suggestions for improving the course content, design or materials.

15. Please describe any improvements for the assignments and tests/quizzes in the course.

16. Which WebCT features do you feel comfortable using? Check all that apply.

a) Bulletin Board
b) Email
c) Syllabus
d) Calendar
e) Course Content (presentations, documents, etc.)
f) Grades
g) Assignment Drop Box
h) Quizzes

17. Please indicate the primary web browser you will use to access this course. Please see http://webctinfo.unm.edu/browser.htm for supported web browsers.

a) Netscape version 6.2.X
b) Netscape version 4.76
c) Internet Explorer version 5.0 or higher
d) AOL 7.0
e) Other - please make sure you have a browser that will be supported.

18. Which of the following technological issues have you run into during this class? Select all that apply.

a) Connectivity -The WebCT website being unavailable
b) Network firewall issues
c) Problems downloading large files
d) Problems downloading small files
e) Using WebCT bulletin board tool
f) Using WebCT email
g) Problems with UNM CIRT account
h) Lacking software necessary for class materials
i) Slow access/web page loading for WebCT site
j) Not receiving video tapes in a timely manner
k) Problems with video tapes playing correctly

19. When I had a computer or other technology problem, I knew where to get assistance.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

20. When I had a WebCT software problem, I was able to obtain technical assistance.

a) Strongly Disagree
b) Disagree
c) Agree
d) Strongly Agree
e) NA - I did not have WebCT issues
f) I did not know where to get technical assistance

21. Software support for WebCT software problems was accurate and timely.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree
e) Not Applicable

22. I have the technical skills necessary to be a success in this online course.

a) Strongly Agree
b) Agree
c) Disagree
d) Strongly Disagree

23. What suggestions do you have for improvement to the technology used to deliver this course? Please include any comments on the technology itself or development of resources that could better enable you to use the technology.

Appendix B

1. Is this the first online course you have taken?

    a. No
    b. Yes

2. If this is not your first online course, where did you take a prior online course? Check all that apply.

    a. University of New Mexico
    b. Albuquerque Technical Vocational Institute
    c. Other

3. Which resource do you use as a primary guide for knowing what it takes to be successful in the course?

    a. WebCT Syllabus & Calendar
    b. One-on-one discussions/emails with Instructor
    c. Feedback on assignments and quizzes
    d. Emails/Discussion postings from instructor to entire class
    e. Introductory Course Material
    f. Other, not listed above

4. The new course content presented each week builds on the course material from the previous week.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

5. Which of the following resources do you find MOST useful for learning course content? Select only those items that apply to your course. Pick up to two choices.

    a. Textbook
    b. Video Clips
    c. Online Documents
    d. Quizzes
    e. Exams
    f. Assignments
    g. Homework Problems
    h. Interactive discussions/emails with other students
    i. Interactive discussions/emails with instructor

6. Which of the following resources do you find the LEAST useful for learning course content? Select only those items applicable to your course. Pick up to two choices.

a. Textbook
b. Video Clips
c. Online Documents
d. Quizzes
e. Exams
f. Assignments
g. Homework Problems
h. Interactive discussions/emails with other students
i. Interactive discussions/emails with instructor

7. The course materials have enough variety to keep me engaged.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree

8. The assignments are a fair assessment of the course content.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree

9. I can navigate easily through the course layout.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree

10. The instructor provides clear direction(s) for the course.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree

11. The instructor responds promptly to any questions I have.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

12. Feedback from the instructor helped me to better understand the course material.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

13. I have sufficient interaction with the instructor.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

14. I have sufficient interaction with the other students in this course.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

15. I value the interaction with my peers.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree

16. Please describe any suggestions for improving the course content, design or materials.

17. Please describe any improvements for the assignments and tests/quizzes in the course.

18. Which WebCT features do you find difficult to use? Check all that apply.

a. Discussion Tool
b. Email
c. Chat
d. Syllabus
e. Calendar
f. Course Content (presentations, documents, web links, etc.)
g. Grades
h. Assignment Drop Box
i. Quizzes
j. Student WebPages
k. Other
l. I am comfortable using all of the features of WebCT

19. Which WebCT features are you comfortable using? Check all that apply.

a. Discussion Tool
b. Email
c. Chat
d. Syllabus
e. Calendar
f. Course Content (presentations, documents, web links, etc.)
g. Grades
h. Assignment Drop Box
i. Quizzes
j. Student WebPages
k. Other
l. I am not comfortable using any WebCT features

20. Which of the following technological issues have you run into during this class? This question focuses on technology problems usually outside the control of the user. Rather than concentrating on your comfort level with technical tools, focus on any issues that had to do with the technology itself. Select all that apply.

    a. Problems with connectivity, such as not being able to dial-in to UNM
    b. The WebCT website being unavailable
    c. Network firewall issues
    d. Problems downloading large files
    e. Problems downloading small files
    f. Issues with uploading assignments
    g. Problems with other web-based applications used in this course besides WebCT
    h. Using WebCT email
    i. Problems with Quiz functionality
    j. Problems with my UNM login ID
    k. Problems accessing my course after logging in
    l. Lacking the software necessary for class materials
    m. Slow access/web page loading for WebCT site
    n. Problems with the software provided with this course
    o. I did not experience any technological issues

21. When I had a WebCT software problem, I was able to obtain technical assistance in a timely manner.

    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
    e. I did not have WebCT issues
    f. I did not know where to get technical assistance

22. Which of the following WebCT technical support services have you utilized? Please check all that apply.

    a. WebCT phone support (505-277-7490)
    b. Email (webct@unm.edu)
    c. WebCT website help request form
    d. UNM CIRT support center
    e. Support from the course instructor
    f. Support from other students
    g. Other

23. The technical support I received accurately addressed problems I had with the WebCT software.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree
e. I did not contact WebCT software support personnel

24. Which of the following resources did you utilize for learning how to use the WebCT software? Please select all that apply.

a. Instructions posted within the course
b. The WebCT student guide
c. The 'Help' link available from within WebCT
d. The http://webct.unm.edu web site
e. Other online resources such as http://www.webct.com
f. UNM WebCT help (email/phone)
g. I figured out the software myself simply by using it on a regular basis
h. I already knew how to use WebCT from a previous course I took

25. I have the technical skills necessary to be successful in this online course.

a. Strongly Disagree
b. Disagree
c. Agree
d. Strongly Agree

26. What suggestions do you have for improving the technology used to deliver this course? Please include any comments on the technology itself or development of resources that could better enable you to use the technology.

Appendix C

2. If this is not your first online course, where did you take a prior online course? Check all that apply.

8. The assignments are a fair assessment of the course content.

#15. I value the interaction with my peers.

#18. Which WebCT features do you find difficult to use? Check all that apply.

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23. Which of the following WebCT technical support services have you utilized? Please check all that apply.

#24. Which of the following resources did you utilize for learning how to use the WebCT software? Please select all that apply.

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Biographical Information

DEEPTHI (DEE) WERAPITIYA, M.A. is a Training and Development Consultant at New Media and Extended Learning for the Extended University, University of New Mexico.

JENNIFER DREZ, M.A., is Program Manager of Course Development at New Media and Extended Learning for the Extended University, University of New Mexico.

JERALD L. ROUNDS, PhD, PE, ASEE is AGC Endowed Chair Professor in the Department of Civil Engineering, University of New Mexico, and is responsible for the Construction Engineering and Construction Management programs. With over 20 years in construction education and over 10 years practicing in the industry, he is also extensively involved in industry training in the areas of project management and field supervision.