Online WebCT Faculty Training Course Proposal

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The University of Delaware adopted WebCT in the summer of 2000 as recommended by the UD Teaching, Learning, and Technology Roundtable (University of Delaware, 2003). From initial use in 39 classes with 2,472 students, WebCT now involves about 550 classes and 11,500 students. Classes with WebCT components grew by approximately 50% over the school last year – 2002-2003 (Lepine, 2003).

Faculty who wish to use WebCT must attend a three-hour WebCT introductory training class on campus. Each attendee receives a user manual to supplement the lecture and in-class exercises, is given brochures on faculty resources at IT User Services, and is directed to a WebCT resources course – The WebCT Depot. Faculty open the course in WebCT and find documentation, course examples, and other tools. There are also other classes faculty may attend on a host of WebCT features.

When faculty require assistance, they receive live phone support or can meet with an instructional technology or design consultant. While these efforts have been successful in getting most faculty started with WebCT, limitations have emerged.

The Problem

The current training system is quite effective in getting faculty exposed to basic WebCT concepts and assisting them in designing their first WebCT course component. Yet, most faculty do not utilize WebCT features that could markedly improve the education of students. Faculty tend to only replicate traditional course content for transfer to the WebCT environment.

Furthermore, the live class does not meet the learning preferences of all faculty, and, therefore, dissuades some users. Secondly, it does not maximize retention of skills learned in class. With very large workloads, faculty seek to learn new WebCT features at the moment of need and call for consultations or quick troubleshooting. Most support calls are on basic WebCT functions such as course access, grading, and uploading content (Lepine, 2003).

The initial challenge is to accommodate the learning needs of a greater number of faculty and to provide continued WebCT assistance on essential features. The instructional system must effectively complement the live WebCT introduction class and enable learning where and when faculty desire.

Target Audience

WebCT course designers are faculty and teaching assistants with great variation in teaching experience, Internet technology use, and familiarity with course management systems such as WebCT. However, most faculty are not proficient in creating and maintaining online class materials: They must not only maintain their expertise, but also meet other demands of their University positions and other professional relationships (King, 2003). Most faculty wishing to use WebCT are active in e-mail use, review and secure materials on the Web, and are familiar with the types of content that can be shared through a Web site.

Faculty goals and needs. While many faculty at UD use WebCT, research on higher education faculty suggests many UD faculty are uneasy about their standing in light of technology (Adams, 2002). While proficient in their areas, they are generally much less experienced with and somewhat threatened by Web-based technologies. The stress and anxiety of many faculty regarding technology should be relieved to facilitate learning and the adoption of the course management system.

Faculty initially wish to replicate their course content and offer it through a WebCT course component. Whether it be a syllabus, PowerPoint slides, Web pages, research, or other documents, faculty want to know how to prepare, upload, update, and manage their materials. Moreover, numerous faculty wish to limit access to materials they have developed to their students in their courses. Instructors also want to receive, post, and download content provided by students. The initial overriding goal is content duplication and arrangement.

The second broad goal is the reduction of course logistics. Faculty expect that an online environment will require less work from them. They visualize paperwork and its associated administration shrinking as content is digitized and made available through WebCT. Lastly, faculty want to improve communication with and among students. They envision discussions, sharing feedback on student work, and keeping students aware of important class milestones and assignments.

Prior knowledge required. Access is the first step. WebCT designers must begin their work with a UNIX user name and password since WebCT uses these values to allow access. Further, since students will ask faculty for access help, the instructor must be able to provide assistance. And, since students using an online course will expect most materials and communication to be shared electronically, faculty must also have a good grasp of e-mail.

WebCT is a Web interface, and designers must use their Internet browsers to access content. They should understand the behavior of links, be able to troubleshoot page viewing problems, and understand the general layout of content, links, and images.

File management is the third critical area. Faculty must understand how to locate files on their computers, as well as be able to rename, move, update, and delete them. WebCT employs a file manager that is similar to those in the vast majority of personal computers. Understanding where files reside is also a key concept since WebCT requires users to locate materials for upload and download.

The WebCT class roster, updated from a file from the Registrar, determines student access to the course. Since students will be excluded from the course if they have not paid fees or for other reasons, faculty must be conversant with registration and schedule logistics. They will be the first people contacted by the student if he or she cannot enter the WebCT course component. Faculty must understand these processes to administer the WebCT class roster.

Learning environment characteristics and requirements. In the midst of a demanding semester, faculty will seek to learn new features the moment they need them – at their computers – at home or school. These environments vary with personality style, but they have the potential to limit attention to the task of learning. The learning application must be salient, simple, and intuitive, and enable rapid learning to meet immediate demands within a busy schedule, just-in-time.

In conjunction with learning styles, the system must, again, address variations in faculty technology literacy. Some faculty will be very conversant and may have their own Web sites, while others may have just mastered e-mail. The application must adapt to the styles and backgrounds of each learner and facilitate rapid success.

Learning Objectives and Processes

The application will create an environment to facilitate the development of cognitive flexibility with WebCT and address organizational and individual objectives. Working from the mandate of the University, IT User Services wishes users to achieve objectives in the following areas. Faculty also wish to learn these aspects (Lepine, 2003):

Understand the Nature and Benefits of WebCT

- Web page content
- Course management system context
- Structure and concept of WebCT tools
- Restricted course access

Enter and Navigate the WebCT Environment

- Explain login requirements and successfully login
- Locate and define primary feature areas
- Locate and define context-embedded page controls

Understand WebCT Course Logistics

- Explain how to request a course component
- Request a course component
- Login to WebCT with a student guest account
- Detail the student roster update process
- Locate the Student Table and outline how to re-enable student access

Build and Test Courses

- Use rudimentary course design and layout principles:
  - Course goals and teaching approach
  - Planning for administrative reduction
  - Communication requirements
  - Content creation
  - Functionality selection
  - Planning design and flowcharting
  - Revision and maintenance
- Create WebCT organizer pages with links to files in WebCT and to URLs

- Enable basic communication features:
  - Discussions
  - WebCT e-mail
  - Calendar
  - Reporting grades to students

Since the online course may be used as a supplement to or replacement of the live class, it must offer ways to achieve the above objectives. Most importantly, the online course will enable each user to meet the objectives most important to him or her while simultaneously providing a choice of objectives attractive to all users: The course must have value to all users.

Applied Research Findings and Theory

Since learners progress best when they have opportunities to formulate a deep knowledge of subject-matter (Bransford, Brown, and Cocking, 2000), users of the system will have opportunities to acquire and master WebCT knowledge through active use. Since faculty have a very rich pre-knowledge in academic culture, the text, images, and structure of the application will present a familiar environment with logical tools. Research also reveals that optimal learning occurs when students engage in metacognitive processes that help them guide, monitor, and improve their learning. Therefore, the application will also provide tools to facilitate and encourage this process.

Software environment requirements. As found with classroom experiences, the WebCT online course will improve learning by focusing on the needs and characteristics of the students: How do they wish to learn? What is their culture? Furthermore, the application should create a safe environment where the self-esteem of faculty is supported to build a platform for risk and growth (Huang, 2002): Faculty should feel comfortable enough to try new software features and communicate with colleagues online.

Although much of the course will involve procedures, it will provide a deep environment of concepts and ideas for faculty to immerse themselves in. Ideal learning environments have been found to be knowledge-centered, and this principle can be incorporated into the application. Providing processes for assessment is also an important aspect. In conjunction with findings on metacognition, the software environment should provide mechanisms for users to monitor, reflect on, and improve their learning of WebCT tools.

Lastly, the environment should provide interaction with the rest of the University community. In addition to culture, the WebCT course can provide avenues for collaboration between users. Not only will this provide a richer response to questions for assistance, but, it will give more experienced users the opportunity to be mentors which will, in turn, reinforce their own learning. Moreover, it has been found that communications between mentors and apprentices which are observable to the community, act as a scaffolding for learners who would not normally utilize such tools due to personality development differences (O'Neill and Scardamalia, 2000).

General cognitive theory application. It is critical that system users be able to control and tailor their learning for the purpose of real-world application (Brown, Collins, & Duguid) (Huang, 2002). Faculty will initiate use with the system and construct real courses in the performance environment. The instructional environment should duplicate the use environment, and, moreover, not oversimplify the domain. Faculty – apprentices – should also be exposed to experts and fellow peers who are using WebCT.

It is important to recognize that the application should mesh well with the way that learners will access it. Faculty should be free to visit and revisit the application and have access to all points of the course. WebCT is a sophisticated environment that requires multiple exposures through the lenses of numerous objectives and needs. The online course will facilitate cognitive flexibility that meets these criteria. It has been posited that this cognitive flexibility is best fostered with these diverse user interactions in the domain (Spiro et al., 1992).

Behaviorist applications. Since learning to use WebCT involves imitating software procedures, the learning environment should be very similar to the performance environment (McNeil, 2003). Faculty success will in large measure depend on rote learning of WebCT's tools. These designer methods should be linear and demonstrate every behavior required to achieve the result: The steps should be as granular as possible and enable mastery of small sequences that can be assembled into the full procedure. Further, they should support just-in-time access in times of immediate need by the learners.

Adult learning approach. The users of this application will be adults with pressing needs. Many are interested in improving their instruction; some are curious about new technology; and, many feel compelled and pressured by administration to keep up (Lepine, 2003). The software application will perform optimally when it considers the following principles of Androgogy (Huang, 2002):

1. Learners need to know how learning will be achieved; they also wish to know why it matters.
2. Adults need to engage in and control a self-directed learning process.
3. The identity and background of adults provides a very rich source of pre-knowledge that heavily impacts learning.
4. Adult learners seek training when there is a necessity for it in their lives.
5. Adults prefer and learn best when they attack real-world problems.
6. Adult motivation to learn is directly proportional to an area's direct impact on their lives.

While these principles have been revealed with children and young adults, the independent adult learner is usually in a better position to demand that such principles be met and seek learning opportunities that provide them. Therefore, the WebCT online course should provide immediate benefit to faculty; it should bring valuable results; it should help meet administrative and pedagogical goals.

Design Elements

WebCT was chosen as the application environment since situated cognition requires that the user construct products while occupying the environment in which they will be used: Learning will be indexed in WebCT. Faculty will use the same WebCT environment to gather information and synthesize real-world knowledge as they do to create courses; the context is WebCT. The WebCT online course will also be composed of several components that will be based on the following design principles of online environments outlined by Howell (2001). These should help facilitate learning gains over traditional lecture methods:

1. Do not use a lecture-style approach.
2. Create connections for learners with others to maintain human contact and antidote isolation.
3. Individualize course offerings.
4. Provide multi-modal approaches for different learning styles: visual, auditory, and kinesthetic.

Access, navigation, and architecture. Users will enter the WebCT training course by logging into WebCT. After accessing course materials, they will remain in WebCT to open their own courses as designers, and thus, construct learning by creating authentic, artifacts – WebCT course materials, tools, etc. The course will provide a rich domain that can be accessed dynamically according to user needs and interests. Faculty will not be required to follow a process to enter and review instructional elements found in the course: Primary

navigation points will be available at all times. It is believed that this random-access design will accelerate the development of cognitive flexibility with WebCT knowledge and encourage metacognitive processes.

Language and Visual Appearance. The site will present very concise labeling for links and page headings to enable quick access as prescribed by a behavioral approach. Faculty will visit the site with just-in-time needs and should easily find content that duplicates the performance environment. Furthermore, the body text of each page will be as short as possible and step users through a clear set of procedures. Other content, such as theory, will not be included. Once a user chooses an area, he or she be presented a linear path to master the rudiments of the WebCT feature. Faculty will be provided text and images that enable rote memorization of basic steps.

Each page will present images as close to the performance environment as possible. When faculty return to design a course, they will easily recall procedures for a tool since the performance environment will act as a stimulus for recall of procedures.

Tool testimonials. Users will be able to listen to comments by their peers about each WebCT tool. A picture of the faculty member will be presented with a recording of him or her discussing why he or she used the tool and the benefits it provides. These testimonials will help create a context for collaboration (see Forum & Help section), and help antidote the fears many faculty may have about their abilities with software.

Tool examples. Each tool will offer a live example to explore as a student. Following the behavioral method, users will see the finished product derived from procedures for that tool. Users can judge the shaping of their behavior toward the target result or they may customize their own course. Furthermore, the concept of the tool will be actively constructed in an environment that duplicates a course offered to students since users will use tool just as their students will in a WebCT course component.

Design assistants. Each step of the basic configuration of a WebCT tool will be shown. Short text will parallel the precise images presented in a linear fashion. While the user will be able to go fast-forward, backtrack, and randomly view any step, all information will arranged in a linear fashion. Furthermore, when a design assistant is opened, it will be launched as a floating window that may be used when constructing the tool while the faculty member is actually in a course he or she is designing. Therefore, these instructions will utilize the linear, granular arrangement of procedures, while enabling immediate application in an authentic environment of real-world challenges prescribed by constructivism.

Contextual readings. Users who wish to read about each tool may also launch a floating, WebCT-help window that discusses the tool they are exploring. The window will be configured so that it presents tool-specific information, not the entire WebCT help guide. This content will only require that the user click once. In addition, the tool will enable users to acquire detailed content that is required to create more sophisticated constructions and is prescribed by general learning findings.

Manuals download. Reinforcing the acquirement of detailed procedural data for deeper knowledge construction, users will be able to download user manuals that they can print out. These manuals present straight procedural knowledge along with detailed tool discussions. Document formats will conform to the technical requirements outlined in this section.

Personal notes and to-dos. Since research reveals that metacognitive processes increase learning, each user will be able to keep personal notes and a to-do list in the application. In addition, it is assumed that learners will self-assess as they work on their courses in the performance environment. Notes about what needs to be reviewed, ideas about how to apply a tool, and other understandings can be recorded in this area. Although it is not known how many users will use this area, it will complement their metacognitive processes.

Forum and Help section. This discussion area will connect users and create a pathway for collaboration. Users will be able to ask for and provide help to each other. It is hoped that collaboration will occur between users who are expert on certain tools and users with questions on those tools. Further, it is expected that faculty will be encouraged to use this area as they observe the benefits to apprentices and experts.

Implementation Setting and Technical Requirements

IT User Services will initially continue to require users to attend a live WebCT class presenting policies and procedures, as well as WebCT basics. Since the online course will enable users to master certain tools, the live course may be greatly shortened.

Users will enter the online training course only as needed since WebCT designer access is enabled after a faculty member attends the live class. Faculty will be accessing the WebCT online class at home and in the office from computers loaded with Netscape and Microsoft Internet Explorer. Most of these computers will be MS Windows or Macintosh machines and be loaded with the Microsoft office suite and Adobe Acrobat Reader.

Although all users will have access from UD's high-speed network, the application must also perform well on 56K modems. Therefore, page weight will be kept to a minimum with short text and optimized images. Lastly, since most users have higher-resolution monitors, page layout will be designed for 800 x 600 pixel resolution.

Anticipated Results

Changing the traditional WebCT introductory training system presents several benefits, but may also bring difficulties in some areas. Since users will likely no longer be required to attend a three-hour session, they will spend less time with experts and colleagues and not have as much practice on tools. Although the online course will present detailed instructions, many users may simply call the help line and increase support demands rather than use the online course. Moreover, the decrease in class time affords less of an opportunity for IT User Services to assess and address initial WebCT user needs: The online course provides no way for IT User Services to assess comprehension.

The online course, should, however, bring several key benefits. With less of a time commitment required, it is expected that more users will utilize WebCT: A one-hour class is easier than a three-hour class (Lepine, 2003). New designers will also be able to individualize their study times and the content of that study. Learning can take place at any time, on any tool, for any length of time. Study becomes self-initiated and individualized.

Learning is also expected to improve: Since faculty will actively construct real courses with tools they choose, as they are needed, retention and skills will improve. By interacting with the course as they choose, faculty will achieve a subset of the main learning objectives that will enable them to achieve deeper, rather than, broader knowledge. Fewer tools will be learned, but learned well.

In addition, since faculty will more effectively learn tools, they will most likely have a more successful WebCT experience which will lead to the creation of more WebCT course components. Since faculty will be able to find help for a tool very quickly, it should make it easier for them to learn a tool, and as a consequence, call less frequently for instructions on a tool. Most importantly, as faculty become more successful with WebCT, they will begin to employ it for more active learning, and improve student education in their courses. After all, that is the primary motivation of the University for the WebCT investment.

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