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Keyword: Online, Web-based, Course management system

Enhancing Face-to-Face Courses with A Course Management System

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Abstract

This article presents a development system for faculty creating online materials to enhance their face-to-face courses. The process of determining the purpose, organizing the content, and evaluating the results leads instructors through an effective development plan. Faculty use course management systems for a variety of administrative and pedagogical reasons, such as to augment course content, increase active learning, provide feedback, and increase communication. Organizing the online materials requires a clear, succinct and consistent structure. Through ongoing evaluation, faculty can refine materials to support student achievement.

Introduction

Technology has quickly become part of the daily living and learning routine. In education, it is common practice for schools and universities to use networked computers with continuous access to Web-based files, resources, and communication. Course management systems (CMS) have become important software for traditional resident faculty as well as distance education faculty. As they create digital information for instructional purposes, their task is simplified by this software that groups technology tools for communication, course content, and gradebook management.

The course management technology used in higher education classrooms challenges faculty to rethink how they structure their courses. The following system developed at the University of Pittsburgh helps faculty plan effective online materials using the CMS of Blackboard®. The guidelines can easily transfer to other institutions and CMSs (e.g., WebCT, eCollege, Learning Space, Angel). The three-step system for Web-based course enhancements encourages faculty to (1) determine their purpose, (2) plan the organization of course content, and (3) evaluate the results.

Developing Web-based Materials

According to the 2002 Campus Computing Project, nearly one-fifth of college courses use a course management system (Warger, 2003) . For traditional, face-to-face courses, Dabbagh (2004) reported CMSs can be used to promote collaborative learning, enhance critical thinking skills, and give all students equal opportunity to express their views. In another study, Cennamo, Ross, and Rogers (2002) noted increased active learning with Web-based materials. They redesigned a large enrollment course to include Web enhancements (e.g., PowerPoint slides, outlines, study guides) and concluded "With the Web pages providing the basic factual information and assessments, students confirm that they have become more actively involved, not only in learning online, but when participating in the face-to-face class sessions" (p.32). Byers (2002) agreed and summarized that there is a "paradigm change from students as passive receptors of data to students as active learners."

While many faculty agree on the benefits of using CMSs, most recognize the "considerable costs in terms of faculty time and effort" (Dabbagh, 2004). Blending two delivery systems requires significant preparation time. Dabbagh recommended careful consideration be given to integrating both delivery contexts rather than duplicating activities in each. For example, an instructor can pair students to exchange drafts of papers online and provide a rubric for evaluation, then trade and discuss the evaluations in class. Students also have time constraints and must understand how to distribute their time between online and in-class activities.

I. Determine the Purpose

Faculty goals for putting materials online seem to center on either administrative or pedagogical concerns. Some faculty simply want the convenience of sending class email, distributing handouts, or keeping an online gradebook. In her study of faculty from nine universities using Web-enhancements for face-to-face courses, Wingard (2004) noted "the longer faculty work with the Web, the more likely they are to pursue and derive pedagogical benefits from the technologies" (p. 11). Experienced faculty envision a CMS as a means to help them achieve instructional goals through problem solving teams, question and answer sessions, or online simulations. Joe Grabowski in the Department of Chemistry at the University of Pittsburgh notes that "the real benefit of Blackboard may be twofold: (1) the level of organization that it naturally fosters in its faculty users and (2) the 'just-in-time' access to traditional and non-traditional teaching material, both of which greatly benefit all students" (J. Grabowski, personal communication: email, January 27, 2003). Whether for administrative or pedagogical purposes, creating online materials is a cumulative process that develops with experience and feedback.

Faculty have identified the following as some of their teaching goals for using a CMS:

- Augment course content

  Many faculty augment their course content with handouts, charts, images, study guides, or PowerPoint slides. In addition, the Web offers a rich source of reference materials that enable faculty to supplement and individualize instruction. Faculty often link to tutorials, interactive games, simulations, government statistics, or virtual field trips.

  Many faculty post PowerPoint slides that students print and bring to class. Slides offer a rich collection of both graphic images, photographs, and text that students use to review

key points and enhance note taking. It is helpful for students to review content in a variety of learning formats.

- Increase active learning
  During 50-minute classes, faculty are often challenged just to complete their lectures yet provide supplementary material and additional learning activities. Therefore, they use the CMS to increase active learning outside of class. They create online activities that engage learners in reading, writing, and reflecting on course content. These active learning exercises may include case study discussions, team debates, or review exercises.

  Joe Grabowski in the Department of Chemistry developed a Web-based interactive Jeopardy game (http://www.pitt.edu/~joeg/CHEM0310/Jeopardy/jeopardy.htm) to reinforce course concepts. Through their CMS site, he and his colleagues link to one or more existing games on the Jeopardy Website.

- Provide feedback
  Feedback can be in the form of instructor or student comments, and can be delivered in either email, chat, or discussion board postings. The asynchronous communication tools (i.e., email and discussion board) allow time for reflection, which is beneficial for higher levels of thinking such as analysis, synthesis, and evaluation. Furthermore, reticent and international students are often more comfortable participating in asynchronous communication.

  Noticing the same email questions every semester, several faculty members maintain a frequently asked question file in their Blackboard courses. Others, create question and answer discussion forums by topic or chapter. Each semester, they generate new discussions based on questions submitted by students. This allows students to respond to one another with faculty or teaching assistants monitoring the responses. These question and answer strategies can be time efficient for faculty who find they repeatedly answer the same questions.

  Faculty also like the CMS quizzes for the practice and immediate feedback they provide to learners. The quizzes provide the opportunity for reinforcement or review. Because of the possibility of cheating, most faculty do not use the quizzes for credit even though their completion may be required. Some instructors consider the quizzes in students' participation scores. Matching, multiple choices, short answer essay, and true/false question formats are available. In the following question, instructional feedback is provided with an explanation of the correct answer:

  > One of the largest influences on the expansion of the fields of clinical psychology was:
  >
  > A. increased frequency of psychopathology.
  > B. **World War II.**
  > C. mandatory school attendance for children.
  > D. the opening of many new graduate programs.

Feedback: America's involvement in WWII necessitated mass testing of military personnel, a task uniquely appropriate for the field of clinical psychology.

The Center for Instructional Development & Distance Education (CIDDE) at the University of Pittsburgh assessed the impact of online CMS materials on Pitt students. Eighty-four percent of the students indicated that the quizzes/practice exams helped them to prepare for exams and focus their study efforts (Nicoll, 1999). Practice for cognitive skills is often overlooked, but it is just as important as is feedback on physical skills.

- Increase communication
  Most CMSs can be set to automatically open to the Announcements page. Here, faculty post friendly reminders of assignments, room changes, or syllabus updates. Instructors who use this Announcements feature most effectively post messages routinely to encourage students to check the course regularly. Once students are online, they're more likely to check other sections of the course.

  Pitt instructor Tony Novosel teaches a history course on Ireland and begins the course with a brief "expectations survey" using Blackboard essay-style questions. His questions include (1) What specific experiences and interests do you bring to this history course? (2) What do you want to take away from this class? and (3) Is there any other information you would like to share with me? This survey helps the instructor to know his students and communicate more effectively.

  Blackboard offers both asynchronous and synchronous communication tools. The instructor's goal should determine the appropriate communication strategy, e.g., the discussion board when unique, thoughtful responses to a group dialogue are desired; email when repetitive responses such as answers to study questions are expected. In order to build a meaningful dialogue, some faculty require students to post and respond a specific number of times each week.

  Lillian Beeson from the Department of Communications at the University of Pittsburgh at Greensburg appreciates the convenience of using the discussion board to manage groups for collaborative assignments. She explains, "The communication feature allows students to email one another and dialog on the projects, arrange meetings, or share information" (L. Beeson, personal communication; email, February 8, 2003). Students also appreciate the convenience of being able to easily communicate with their teammates.

  Virtual or real-time chat is a valuable tool when students need a timely answer or decision. For example, virtual chats are helpful when several team members are organizing a collaborative assignment. Real-time discussions are most valuable when the facilitator has a clear goal, a specific starting and stopping time, and a small group (6 to 8). It is also effective in building a sense of community among learners. In her study of synchronous discussion integrated with a traditional face-to-face graduate course, DeArment (2003) recommended that students be provided with (1) direction, training,

and practice before the first chat session, and (2) guidelines on netiquette (online etiquette) to eliminate rude or superficial comments (p. 283).

Some instructors enhance their courses with guest speakers responding to student questions through virtual chats. Others distribute assignments (i.e., case studies, math problems, readings) several days before the chat, and use real-time chat to discuss questions or concerns. However, typing and reading skills affect participation and should be considered in planning groups and facilitating the discussion. Some students report that the chat archive is more helpful than the live chat because they can analyze the postings.

II. Plan the Organization

The Web is a unique form of content delivery that requires a thoughtful plan. Once the professor has determined the purpose for using a CMS, the next challenge is to logically organize the online material. Siragua (2000) explained a good Web design must be simple and intuitive.

Most faculty prefer a linear presentation for their online materials, often using the weekly lesson format from their syllabi. Students like the simple, consistent structure created by explicit headings and subheadings, i.e. introduction, objectives, readings, lecture notes, learning activity and/or assignment. The organization of materials shown in Figure 1 will work for most disciplines; however, all faculty may not initially have the need or detail for all these subheadings. The broad, shallow organization of these Web pages simplifies navigation.

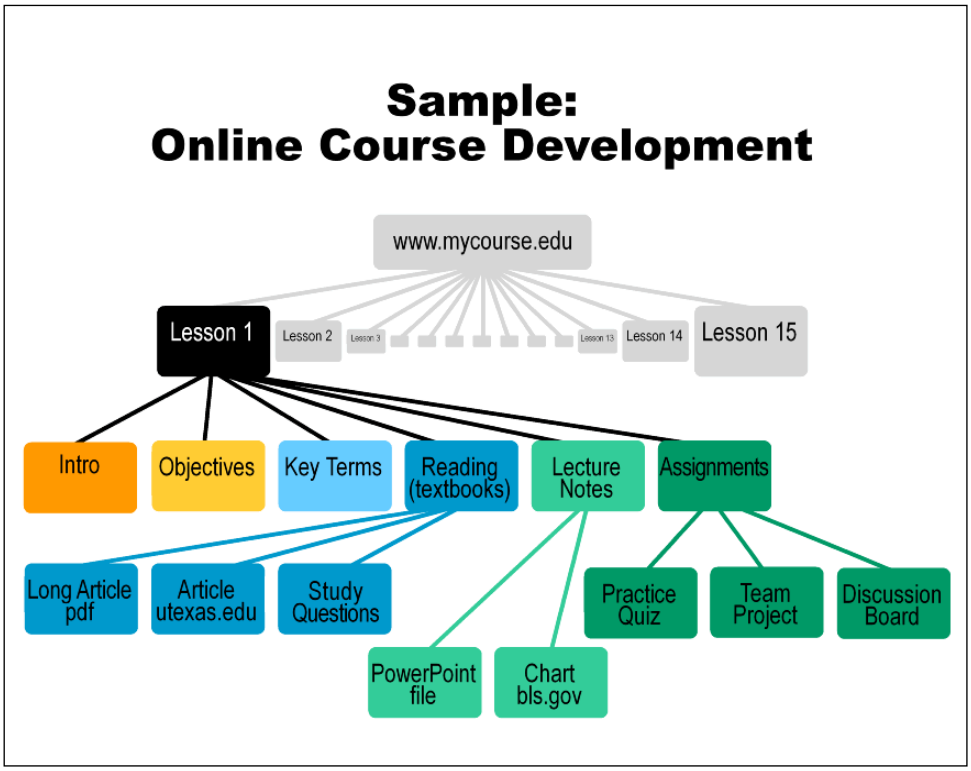

Figure 1: This diagram shows a commonly used organizational structure for online course materials.

Another way of structuring the lesson is through the model of course instruction introduced by Robert Gagne. Gagne (1985) identified the following nine events for a systematic approach to instruction: (1) gain attention, (2) inform learners of objectives, (3) stimulate recall of prior learning, (4) present the content, (5) provide learning guidance, (6) elicit performance (practice), (7) provide feedback, (8) assess performance, and (9) enhance retention and transfer. The introduction and presentation of content will likely take place in the face-to-face classroom. The objectives, guidance, practice, and feedback components may be put online. Practice activities enhance learning, retention, and recall; yet there is often little opportunity for practice in the classroom. Problem solving exercises, term paper outlines, discussion questions, small group activities, and quiz questions are all examples of Web-based practice activities.

Users tend to skim Web pages and the longer the page, and the more likely students are to "read" very quickly (Siragusa, 2000). Therefore, a clear, concise writing style with short paragraphs, bulleted lists, and highlighted key words helps the reader to efficiently process the text. Additionally, visual and text cues, such as tables of contents, overviews, and summaries help learners to organize content. When online content is important, faculty may direct students to print the material and read it offline.

One of the primary benefits of a CMS is that it allows students to engage the course content. Learners have the convenience of unlimited access to course resources. Through interaction, students can pursue topics of interest to develop proficiency, answer questions, or explore course content. It's this interactivity that allows each student to individualize the learning experience. However, incorporating too many hyperlinks into text interrupts the readers' train of thought. In this case, consider listing related Websites with a description of what students should gain from each site.

III. Evaluate the Results

Evaluation of the online materials should be both formative and summative, considering both the process and the outcomes. Most faculty evaluate Web-based materials based on the level of student use and the level of student achievement or performance. Level of use can be regularly monitored through the CMS statistics in the control panel. It is helpful to know what areas of the course students use and when they use them. Faculty can check these statistics by individual students or as a class summary.

Informal classroom assessments require minimal class time and are a source of valuable information regarding student perceptions on their use of the online materials. For example, an instructor may ask students to write a one-minute paper on how often they use the CMS Website and what materials they find most valuable in their learning.

The Department of Library and Information Science's Web-based master's program, FastTrack, has successfully used online focus groups in formative evaluation. The following questions have been posted as separate threads in asynchronous discussion: (1) At this point in the semester, have your course expectations been met? (2) Are you satisfied with the interaction among students and with your instructor? (3) Have you had to address any technology issues this semester? Discussion forums consist of 10 to 12 students led by an instructional designer facilitator not associated with the Department. Students' comments about their learning can be

applied immediately to course revisions. Surveys, usually a daunting task to administer, are quite feasible with CMS and have also been used by the FastTrack program. Data collection and analysis results are available instantly.

In addition to the students' time using the CMS, faculty should consider their own time in developing and using the online materials. Additional communication and learning activities add to the time commitments of the instructor. Ideally, the online communication and material should help students achieve the course goals and better prepare them for in-class sessions.

Generally, faculty determine the level of student achievement through the exams, projects, and assignments for the course. Web-based practice quizzes, links to writing resources, and examples of projects from previous semesters (used with permission and without names) can support students in completing graded assignments. Also, the end-of-course evaluations can include questions that provide student feedback on the effectiveness of Web-based materials.

Conclusion

Web-based course delivery systems can provide convenient, individualized, and high quality instructional materials to learners. CMSs are a relatively easy and inexpensive way to provide course materials and to communicate with students. They are timely, secure, and flexible. They allow faculty to extend class time, offer just-in-time resources, provide practice with immediate feedback, and promote collaboration. Through this technology, students can access audio, video, and printed resources from around the world at any time and from any place.

Using CMSs requires a great deal of advanced planning and attention to detail. The system presented in this paper provides an efficient and effective development plan. First, instructors establish a clear instructional or administrative purpose for using a CMS, such as to augment course content, to increase active learning, or to provide feedback. Second, faculty organize online content in a clear, intuitive format with a consistent layout of headings and subheadings. As the course meets in a face-to-face environment, materials must be organized to balance and support classroom activities without overwhelming the learner. And third, faculty continuously evaluate the materials and their impact on student learning. Effective design is an ongoing process of modifying online materials to meet the needs of both the instructor and the students.

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