AC 2000-188: Electronic Course Development and Delivery using CourseInfo Course Management Tool

Albert L McHenry,

Lakshmi Munukutla, Arizona State University
Electronic Course Development and Delivery using
CourseInfo Course Management Tool

Lakshmi V. Munukutla and Albert L. McHenry
Arizona State University East
Mesa, Arizona

Abstract

Communications technology is revolutionizing Higher Education as it adapts to the new telecommunications technology to provide formal education through distance learning using the Internet. Due to this paradigm shift, several universities in the United States (Georgia Tech., Stanford, Penn State, etc.) are delivering entire degree programs primarily at the graduate level, through the World Wide Web. Primary beneficiaries of this new technological approach are the students who can work through the course at his or her own pace and in their own space provided they have access to the WEB.

The major challenge that needs to be addressed by higher education institutions is how to motivate faculty members to embrace this approach. Faculty buy-in is essential to engage in distance learning through Internet at any institution. The least resistance path to stimulate faculty may be to provide less cumbersome technology to prepare and deliver the course material. This paper discusses the CourseInfo management tool used at Arizona State University to create and maintain online courses and course supplements.

Introduction:

Internet or World Wide Web based distance-education programs are growing around the world in size and scope, with remarkable speed. Traditional universities are in competition for students with several non-traditional institutions such as virtual universities, Britan’s Open University, and Western Governor’s University to name a few. For instance, Britan’s Open University (http://www.open.ac.uk/) founded in 1969 serves over 200,000 students around the world currently by offering video and Internet-based courses (1). However, Some leaders in education believe that not the number of students served matters but the content and quality of education that is provided through various delivery mechanisms must take central stage. At a recent conference, held at Northern Arizona State University, The Role of Universities in the Future Information Society, Utah State Governor, Leavitt comments that Higher education ought to be focused on content, not hardware (2).

Distance education via Internet is creating new learning opportunities with flexibility to students anywhere in the world and at the same time it poses a threat to traditional classroom practices and faculty roles. Consequently, the Internet based
distance learning model in higher education appears to be more approachable to many people than does the traditional classroom model. Hence, most higher education institutions are considering the incorporation of Web-based course delivery at all levels to keep up with the competition.

Several of the largest research universities are attempting to form a distance-education consortium to create an on-line education portal (3). In this model there is no direct competition between participating research universities for the same students because each institution’s on-line offerings specialize in different subjects. Each institution that is ready to implement Web-based distance education into their course offerings have to address the following issues such as: quality of education, academic freedom, on-line course ownership (who owns the right to course material? Faculty member or Institution), students’ cheating, proctoring of examinations, technology standardization and finally impeded cost and time to develop an on-line course. The data from some studies show that institutions have to bear higher cost to deliver on-line courses than the courses offered in a traditional classroom setting on campus (4). The benefits of on-line course offerings include: access to information any time and any location by students, approachable to working people, pace of instruction tailored to match background of each student, student-centric learning and asynchronous learning style to match flexible schedule of the learner.

On-line course offerings are heavily dependent on technology and this may create various stress levels in students with different background. In addition, the technology used to deliver on-line courses has to be seamless from one course to the other to promote content-based learning of the students. Arizona State University (ASU) selected CourseInfo as a preferred course management technology tool to develop and deliver some on-line courses (visit www.Blackboard.com for more details). CourseInfo met ASU’s basic selection criteria such as, ease of use, platform independence, and administrative manageability of the course management tool. This paper describes how CourseInfo is used to develop and deliver the course material electronically.

**CourseInfo Course Management Tool**

Distance Learning Technology (DLT) group at ASU offers workshops to assist faculty members to jump start using CourseInfo to develop course material for on-line delivery (5). A typical course overview screen shown in Figure 1 is the first screen any student or instructor will first encounter when they direct a browser to the course URL. The CourseInfo home page has three main items: Navigation area, Instructor Control Buttons and Main Course Window. The series of buttons located along the left side in Figure 1 are available in both student and instructor view of the course. However, students use these buttons for course navigation while the instructor uses the control panel for course development. Certain areas could be password protected for security. Most of these areas are empty during course development and the instructor has the privilege to fill in the areas with specific course content.
The Announcements button leads to a high-profile area in the main course window where announcements, updates and reminders to the students are posted for display.

<table>
<thead>
<tr>
<th>Announcements</th>
<th>Course Information</th>
<th>Staff Information</th>
<th>Course Documents</th>
<th>Assignments</th>
<th>Communication</th>
<th>External Links</th>
<th>Student Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>O  Today</td>
<td>O  Last 2 weeks</td>
<td>O  Last Month</td>
<td>O  All</td>
<td>O  Show</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1**

The Course Information button area is used to post general information about the course such as course description, prerequisites and times/locations. The Staff Information button can be used to include instructor’s contact information or any other staff members such as teaching assistant or grader involved with the course is also posted for students’ use. The Course Documents button leads to the area where the majority of course information is located for the online course that will be delivered to the students. Primary contents imbedded into this area are course syllabus, handouts, lecture materials and any other reading material related to the course. The Assignments button is dedicated to hold course assignments such as homework, tests and quizzes. The Communication button provides Blackboard communication tools such as discussion, chat rooms, e-mail, etc. among student peers or between instructor and the student. The instructor can use the External Links buttons to list helpful URL’s for student’s use. A Student Tools button provides access to a series of tools that can be used to submit information, view course related dates and check grades.

There are five Instructor Control buttons (Control Panel, Enroll, Logout Search, and Resources) located in the course for online course development. The Control Panel provides the instructor access to all course development and management tools. The Enroll button permits instructor or students access to register as a user of the course. Logout button logs the user out of the CourseInfo system. The Search button gives access to search all course materials by criteria. Resources button links directly to Blackboard online resources to assist with all course development matters. Instructor
can maintain a grade book online and can monitor the usage of the online material by each student. However, all these features are not fully exploited in the initial phase of the course development. The authors of this paper also did not exercise the option of online testing. So far the tool performance seems to be more than satisfactory from students’ perspective. The Majority of time has been spent in getting the material ready for electronic delivery using CourseInfo and the real benefits will be enjoyed later in subsequent offerings of this course. Junior level Electronic materials course in electronics engineering technology program is used as a vehicle for this paper.

Conclusion

Majority of our student body come from high schools, community colleges, and working population both in state and out-of-state are well versed with computers and technology. Therefore, shifting the delivery technique from traditional classroom lecture format to an electronic delivery was received with great enthusiasm. In particular working students are enjoying more benefits of online course offerings than traditional students because of the flexibility that it can offer to manage their work schedules. Even though the technology is very simple to adopt using CourseInfo but the faculty member needs time to develop the course material to fit to this format. It is the institution’s responsibility to provide adequate resources to acquire their faculty buy in to have successful online course offerings.

Bibliography


Lakshmi V. Munukutla, Ph.D.

Lakshmi Munukutla received her Ph.D. degree in Solid State Physics from Ohio University, Athens, Ohio and M.Sc and B.Sc degrees from Andhra University, India. L.V. Munukutla developed an interest in semiconductor device processing technology and characterization while she was working at Motorola Inc. L.V. Munukutla’s current focused research areas are semiconductor device processing technology (in particular oxidation and lithography), environmental issues related to the semiconductor processing, characterization of interfaces using both electrical and surface characterization tools, and semiconductor packaging technology. She has been active in research and published several journal articles. She holds an Associate Dean position in the College of Technology and Applied Sciences at Arizona State University East.
Albert L. McHenry, Ph.D.

Dr. Albert L. McHenry is Professor and Dean of the College of Technology and Applied Sciences at Arizona State University East, Mesa, Arizona. He holds a BS Industrial Technology from Southern University of Baton Rouge, Louisiana, a MS Technology and a Ph.D. Technical Education from Arizona State University. His area of technical specialization is digital electronics. He has industrial experience with the Boeing Co., 3M Co., Motorola Inc. and Minority Engineers of Louisiana. His current research interests include noise in digital systems design methodology and effective paradigms in engineering technology education. He is Co-director of The Western Alliance to Expand Student Opportunity, a National Science Foundation Alliance for Minority Participation project. Dr. McHenry has been actively involved in four-year technology programs for over 35 years. He was the recipient of the 1996 ASEE, Fredrick J. Berger Award and is presently the Chair of the Engineering technology Council and a member of the ASEE Board of Directors.