Promoting a Comprehensive View of Library Resources in a Course Management System

Abstract

Purpose

The purpose of this paper is to demonstrate the way the University of North Carolina Libraries have begun to incorporate library resources into their university course management system.

Design/methodology/approach

Presents a case study of course-specific web pages that have been incorporated into BlackBoard sites as a way to facilitate the use of the library and to promote a comprehensive view of library services and resources at the University of North Carolina at Chapel Hill.

Findings

Students and professors appreciate course-specific web pages that provide access to library resources that relate directly to class assignments. Web page usage statistics show that students are using librarian-created course pages to access library materials.

Originality/value

This paper describes a way for librarians to bring library resources into a course management system that may be beneficial for other academic libraries.

Keywords: course page, course management system, learning management system, course-specific library resources

Paper Type: Case Study

1. Introduction

The reference and instruction librarians at the University of North Carolina at Chapel Hill (UNC) have begun a project to incorporate digital library resources into the course pages of the campus course management system (CMS) as a way to facilitate the use of the library and to promote a comprehensive view of library services and resources among students.

Course management systems, also called learning management systems, have been in development for several decades. Course management systems take the form of licensed systems like Blackboard/WebCT and open source systems like Moodle, Sakai, and .LRN. While many colleges and universities continue to license Blackboard, some are moving toward open source systems that will allow individual schools greater ability to customize their CMS for the particular needs of their campus.

The creation of software to manage courses online grew out of the use of communication and broadcast technology to facilitate distance education. In the United States, this began in the 1950s when the University of Houston first televised university courses for students who could not take classes on campus (50 year of Houston PBS History, 2007). Course management systems, as they exist today, were developed in the early to mid-1990s as Internet technology began to facilitate sharing and accessing information online. These systems have flourished and are no longer used only in the context of distance education. It is not an exaggeration to say that students now expect information about their courses, offered both on-campus and through distance education, to be available via a CMS.

As the usage of CMSs has increased within academia, academic libraries have struggled to find and promote their place within them. For nearly a decade library and information science literature has discussed the need to integrate libraries into course management systems and called on librarians to become more proactive in working with the campus CMS (Cohen, 2001; Machovec, 2001). Librarians have been concerned that neither the designers of course management software nor instructors were taking advantage of the rich resources made available through university libraries.

The design of many early course management systems did not make it easy to include library resources. In fact, some CMS vendors provided links to collections of educational resources that would charge students to access them or provided links to low-quality free web sites (Cohen, 2001; O'Leary, 2001). Options for linking to local library resources such as online databases, authoritative electronic journals, and online catalogs were simply not offered. The literature suggested that librarians needed to better market their library's resources and services that would integrate easily into the CMS as well as to better educate instructors about how to do so (Cohen, 2001; Cohen, 2002; Shank & Dewald, 2003; Rieger, Horne, & Revels, 2004).

The development of course-related web sites by librarians began appearing in the literature beginning in the late 1990s (Ragains, 1998; Sedam, R. E. & Marshall, J. A., 1998). By 1999 a few libraries had started experimenting with using a CMS to deliver information literacy tutorials or entire courses (Getty et al., 2000). Many libraries began to link to their services through the CMS, particularly for their distance education students (Casado, 2001; Casado, 2002). Several years later university libraries also began providing electronic reserves through the campus CMS (Bales et al., 2001; Cubbage, 2003; Bell and Krasulski, 2004; McManus et al., 2006). Enhancing library instruction through the CMS became the focus of later discussion. Libraries have experimented with a number of methods – from delivering instructional documents through the CMS (Costello et al., 2003) to collaborating with teaching faculty in order to become embedded or integrated into online courses (Cox, 2002; Giles, 2004).

2. Course management software at UNC

UNC currently licenses the Blackboard Academic Suite 6.3.1.645, Blackboard Learning System at an approximate cost of \$50,000 per year and another \$10,000 per year for plug-ins. Sixteen full-time employees of UNC's Information Technology Services department are involved at some level in maintaining and supporting Blackboard; of these, three positions are fully devoted to Blackboard support.

UNC is currently evaluating a move to open source CMS software. The campus Information Technology Services department does not anticipate direct monetary savings in the first years of a potential change, due to development costs and the need for additional specialized staff. However, the campus values becoming part of a community of CMS developers who are collaborating to create systems for the benefit of students and faculty, rather than for the benefit of the corporation from whom a product is licensed.

Prior to Blackboard, UNC used CourseInfo on a limited basis in the mid-to-late 1990s. UNC began testing Blackboard in fall 1999 with just 24 course sections. In six years, the number of courses using Blackboard had grown 100 times, to over 2500 for the 2005-2006 academic year (Eke et al., 2006). In 2005, 23,335 out of 27,276 total students were enrolled in at least one course section that used Blackboard. Students were using the system for an average of 3.3 courses (Eke et al, 2006). According to Eke, by fall 2007, 25,045 students were enrolled in a course that used Blackboard (2008, pers. comm., 25 June).

In fall 2005, over 2100 instructors and nearly 650 graduate teaching assistants were using Blackboard, and by fall 2007, over 2600 instructors and 764 graduate teaching assistants had courses in Blackboard (Eke, 2008, pers. comm., 25 June). Most instructors made use of the content areas of the system to post the course syllabus, course readings, and other course-related

documents. Nearly half of instructors used the grade book feature. Only one-third used the discussion boards to facilitate discussion outside of the classroom or the announcements feature to alert students of new information about the course. One-quarter of instructors used the External Links feature and less than 10% used the groups, quizzes, or survey functions. While the standard Blackboard course page template used by all instructors includes a link to the library home page, it does not include any additional information about library resources.

3. Student Use of the Libraries at UNC

The University Library at UNC is made up of the Walter Royal Davis Library, the main library serving primarily the humanities and social sciences; the R. B. House Undergraduate Library that includes the major reserve reading materials and the Media Resources Center; Louis Round Wilson Library that includes the Manuscripts, Maps, and Rare Book special collections, and the North Carolina Collection and gallery. Additionally, the library network on campus includes twelve specialized libraries covering the subjects of art, biology, Black culture and history, chemistry, geological sciences, information and library science, math/physics, marine sciences, music, and city and regional planning.

Many of the services and resources offered by the Library are available in digital format. Users can access the online library catalog, hundreds of online databases, and tens of thousands of electronic journals and electronic books from various links on the library home page. Another link provides access to electronic reserves materials. Still other links on the home page take users to the digital reference services that Davis and the Undergraduate Libraries offer through Instant Messenger and Libraryh3lp, an integrated IM/web-chat help system designed specifically for libraries. The UNC Libraries house numerous digital collections of important historical documents, music, and film. At present, the largest of these collections is Documenting the American South, an award-winning collection of texts, images, and audio files related to Southern history, literature, and culture. The collection now includes eleven thematic collections of books, diaries, posters, artifacts, letters, oral history interviews, and songs. The Library is committed to increasing its collection of digitized materials. A new department in the Library, the Carolina Digital Library and Archives, is responsible for building additional digital collections.

4. Helping Students Make Sense of Information

In addition to the resources to which the Library provides access, the Internet makes available an almost endless supply of digital materials. Students must learn to find and evaluate Internet resources in order to produce the quality research papers expected by professors. But library science literature shows that students often have difficulty determining the quality of information found on web sites (Boyd McBride & Dickstein, 1998; Scholz-Crane, 1998). In a 2005 study by Wang and Artero, university students ranked web site evaluation as the information skill for which they most needed training (2005).

A click of the mouse takes students to abundant information resources; however, the digital resources available to UNC students are found through many different links and different web sites. The main library web site at UNC offers a confusing array of choices, such as a link to "E-Research Tools" below a tabbed search box with options to search for "E-Journals" or "Quick Article Search." How are students to know what these links actually do? Navigating the maze of online information sources can be very difficult, even after a library instruction session that attempts to orient them to this world of information. Students continue to need the ongoing

assistance of librarians to locate quality articles, books, statistics, and documents for their classes.

Even the more intuitive library services and resources, to say nothing of these difficult-to-use ones, were almost invisible from the Blackboard course page. The simple and mostly unnoticed link to the library web site on each Blackboard course page was not sufficient to help students understand how library resources pertained to a particular class, nor was it compelling enough for students to click on when a seemingly easy-to-use Internet source might provide information for a class assignment.

Because research has shown that in-person instruction is most successful when linked with assignments that require students to utilize library resources (Carter & Daugherty, 1998; Sonntag & Ohr, 1996), the instruction librarians at UNC wondered if they could integrate course-appropriate library resources into the Blackboard pages students use everyday. Organizing these resources in a way that explicitly corresponded to the assignments and readings for a particular class would help them to learn more about using the libraries and to utilize library resources more fully.

5. Legal Benefits

Further justification for more tightly integrating library resources into course pages came on thinking about how instructors use the CMS. In addition to the instructional considerations, research by the campus Information Technology Services group showed that professors at UNC were not taking advantage of all of the educational tools the CMS offered. Most professors only minimally use Blackboard, mostly for posting the class syllabus and announcements; however, many professors also personally scan articles and upload them to Blackboard for their students. These articles posted on Blackboard sites by professors could pose a potential legal problem for the university. Copyright laws in the United States make some allowances for the educational use of materials; nevertheless professors often overestimate the rights that they have. Despite the fact that many professors believe that the law allows unlimited use of copyrighted materials for educational use, this is not true. Copyright law in the United States does not allow them to scan and post unlimited quantities of articles or books, nor does it allow scanned material to be posted online indefinitely. It also restricts the amount of a work that a professor may make available, the number of people that may access copyrighted digitized material, and the amount of time material can be made available. Many professors were violating copyright laws without even knowing it.

To help faculty stay within their rights under copyright, the library offers electronic reserves service to those who wish to make digitized articles available to their students as part of a class. Prior to the beginning of the semester, a professor submits a list of course readings such as journal articles or book chapters to the electronic reserves office. The electronic reserves office attempts to locate the required readings in one of the library's databases so that a link to the article can be provided for the class. Legal use of library databases is strictly controlled by licensing agreements and passwords so that only university-affiliated users may access them. If an article or book chapter is not available in a library subscription database, the electronic reserves office will locate a print copy of the material and will scan it and host it in the electronic reserves database. Access to these scanned copies is restricted to students in a particular class through a password and the material is kept online only for the current semester. This password protection and time limit allow the university to make course readings available legally in one easy-to-use interface. Course pages allow librarians to encourage instructors to take advantage of the electronic reserves system and facilitate student access of the electronic reserves by including an easy-to-find link to these electronic reserves materials.

6. Creating the Course Pages

Given all of these factors, instruction librarians at the UNC University Libraries, led by Lisa Norberg, identified an opportunity to teach students how library resources relate directly to a particular course while simultaneously helping professors expand the ways they used Blackboard as an educational tool. According to Norberg, the idea for course pages came about in the spring of 2006 in response to a request from a political science professor for help with linking to library and web sources via his Blackboard page. The instruction librarians decided to design a custom web page for the course that could be linked inside Blackboard and essentially replace the generic link to the library's homepage that then existed within the CMS. During the 2006 fall semester, librarians began collaborating with a small group of teaching faculty to create customized, course-specific web sites that integrated digital library resources, print library resources, and online tutorials. These web sites were then added as a tab on the course's Blackboard page. Also as part of this project, librarians hoped to be able to help professors get more of their course readings into the Undergraduate Library's electronic reserves system which strictly adheres to copyright laws, instead of scanning and posting them directly into the CMS.

This initial project involved ten courses, including two courses in human geography, two in political science, two in art, one in history, one in African Studies, one in Afro-American Studies, and one in English. Instructional Technologies Librarian Kim Vassiliadis designed a template that could be formatted for the needs of each individual course page. When a professor contacted the library about library instruction, a librarian would mention the option of creating a specialized course page. If a professor was interested, the librarian scheduled a meeting to discuss the possibilities. The librarian would also determine what digital resources the professor had previously used for the course and discuss the syllabus, required readings, and assignments.

After this initial meeting, the librarian carefully read the syllabus to understand the organization and requirements of the class and began to plan the layout of the course web page. The librarian, often with input from the professor, also evaluated and selected appropriate digital library resources that would assist students in the completion of course assignments and then used the template to organize the resources to best meet the needs of the students. By providing access to reliable sources of information, librarians hoped to make the selection of quality resources easier for students, and provide an opportunity to teach by example the evaluation of information.

After a successful pilot project, librarians decided to market the course-specific library resource pages first to the History Department, since the instructors in this department are heavy users of the university's digital collections. As a result of this marketing effort during the fall semester, two professors with ties to the History Department became very interested in working with the library to incorporate digital resources and services into their Blackboard course pages for spring semester. As the semester began, additional professors became interested in having course pages designed for their Blackboard course sites.

As they began to develop the course pages for spring semester, four instruction librarians and two graduate assistants from the School of Information and Library Science met with professors to discuss course web page design, and selection of library resources for the course pages. However, after initial marketing to faculty and development of the template, three of the instruction librarians and one graduate assistant were able to dedicate most of their time to other projects. Most of the time involved in creating a course page comes at the beginning of the process in meeting with the professor and selecting resources. Librarians found that the initial creation of a course page could take between two days and two weeks, but after the creation of the page, minimal changes needed to be made during the semester.

For most classes the course page includes links to the online catalog, sometimes with subject headings selected by the librarian as starting points for locating books. Most course pages also contain links to the most relevant databases for journal articles on topics covered in class. There are also links to reference sources like subject-specific encyclopedias and atlases, links to the library's online chat reference service, and links to research tutorials. For some classes the organization of the page includes additional databases for materials like news broadcasts, art images, or digital video content, and links to Internet resources outside of the library. Some course pages also have sections with resources for specific assignments.

In March 2007, Norberg and Vassiliadis presented the course page project through a poster titled "Mastering the Subtle Art of Library Instruction" at the American College & Research Libraries 13th National Conference. Around the same time, librarians at other institutions were having similar ideas for integrating library and information resources into a CMS. At the 2007 ACRL National Conference, Norberg spoke with a librarian at North Carolina State University who was working on a similar idea. At the May 2006 North American Serials Interest Group's 21st Annual Conference, Claire Dygert gave a presentation about American University's integration of library resources with the campus CMS (Moeller, 2007).

7. Expansion of the Course Page Project

By March 2007, librarians had created 20 course web pages for classes at UNC. The pages had a similar look due to a basic web template, but each page reflected the subject, assignments, and information needs of students in a specific class. Many professors struggle with CMS and

web technology and simply never conceived of a class resource that would be so helpful. Without exception instructors have been very happy with the pages created for their classes.

Students have also been unusually enthusiastic about the course web pages. Librarians who created the pages and attended class to meet with students and explain how the page could help them during the semester have found that students reacted much more positively than they do to regular library instruction sessions. While demonstrating course pages, librarians often hear students making positive comments to their classmates. And after class several students have actually taken the time to say how much they appreciate the pages and how they wish that all of their classes had this kind of resource available. Evaluations of the course pages at the end of the semester are showing that because students find using the library web site overwhelming, course pages with a narrower focus on just those resources that are relevant for a particular class are helpful for them.

Because of the positive response received, UNC librarians decided to expand the course page project by involving the subject-specialist reference librarians. Reference librarians already conduct instruction sessions for classes in their fields, but these course pages provide an opportunity to make more students and professors aware of the important relationship between course work and library resources. The availability of this new "product" also gives librarians a reason to market library resources and services to faculty who do not bring their classes to the library for instruction.

8. Current Status

By the end of spring semester 2008, librarians had created 100 course pages for specific classes in over 30 departments. However, librarians recognize that while they do not have the time to create a course page for every single class on campus, they still would like to provide

more subject-specific information than is available on the library web site. So librarians are also creating more general subject guides for blocks of classes that use a similar syllabus and curriculum such as Elementary Spanish, which has 12 sections, and English Composition and Rhetoric, which has 113 sections.

A recent collaboration between the campus Blackboard administrators in Information Technology Services and systems librarians in Davis Library has resulted in a technology solution that will help link more courses to specialized digital library information. Campus ITS has agreed to create a link in all Blackboard courses for which they will attach URL payload identifying a particular class that includes the course number (History 128, for example), the year of the course, the term or semester, and the section number. The systems librarians have created a database in which librarians register course pages they create with the same information. When a student clicks on the library link from Blackboard, a software program written by the systems librarian attempts to locate a course page for the specific section of the course. If that section is not found in the database, the software then looks for a more general course page for that course number, for example, the English Composition and Rhetoric class page mentioned above. If no course page exists for that class, the software program searches for a general subject guide for that academic discipline. If no course page exists for that class, the software program searches for a general subject guide for that academic discipline. In the absence of this, the program returns a link to the library's main web site.

9. Course Page Assessment

Through this experience so far, it is apparent that students and instructors like the design of the pages and access to resources, but librarians are still looking for a way to know if the course pages are truly helping students find and use library resources and if the quality of their citations in research papers has increased. Assessing the effectiveness of the course pages has been difficult because there is not a quantifiable way to determine whether students' learning is truly positively affected by easier access to course-specific resources.

However, the usage of course pages can be assessed by looking at page counts and the number of visitors to each page. The code from StatCounter.com was embedded on four course pages that were used during the spring 2008 semester to obtain statistics on page loads, unique visitors, and returning visitors. StatCounter defines unique visitors as, "Based purely on a cookie, this is the total of the returning visitors and first-time visitors," and it defines returning visitors as, "Based purely on a cookie, if this person is returning to your website for another visit an hour or more later" (Statcounter.com, 2008)

As expected, the most heavily used course pages were the two that had the greatest amount of course integration and the largest number of links that a professor required students to use. The less frequently accessed course pages were for classes whose course pages did not include links to required reading or links for descriptions of class assignments. The most heavily used course page, for an American Studies course with approximately 25 students, had 554 unique visitors during the semester, with 252 returning visitors. The least used course page, for a first-year seminar in the German department, had 39 unique visitors and 10 returning visitors. These usage statistics indicate that students are indeed using the course pages and that many are finding them useful enough to visit multiple times during a semester-long class.

Anecdotal evidence from instructors is also helpful is assessing our work. In requesting additional course pages for the 2008-2009 academic year, one professor said, "…you have always been such a great success with my students, and the information and the help you've given them has proven to be such a factor in the quality of their work" (Dr. Julia Cardona Mack,

personal communication, June 25, 2008). Another professor wrote, "Thanks so much for your beautiful work on our website. It is such a pleasure to work with you and to know that our students will benefit from this impressive resource" (Dr. William Ferris, personal communication, August 13, 2008.

10. Future Directions

There are two areas the librarians want to pursue as the course page project continues. First, looking for ways to improve assessment of course pages. Formal usability studies of the pages would help determine if the current page design is effectively presenting digital resources in a way that is useful for students - also to continue to seek ways to assess how course pages are affecting actual student learning and research.

Second, looking for ways to incorporate more Web 2.0 technology into pages, including adding relevant dynamic content to see if students will use the pages more, and looking at adding RSS feeds and updates from a class del.icio.us account so that students can tag, annotate, and share class-related web sites.

11. Conclusion

The creation of course pages for incorporation into the CMS at UNC Chapel Hill is providing a new way of helping students understand library resources and services. Many other university libraries are now creating course pages or attempting to provide a form of course-specific library resources in their CMS. Examples of the variety of course pages that are bring created can be seen at private universities such as University of Rochester, Oakland University, Duke University, Brown University, Cornell College and public institutions like North Carolina State University, University of North Carolina Greensboro, University of Wisconsin-Madison, Oregon State University, and University of Minnesota. Even commercial vendors are showing interest in these types of resources. U.S.-based Springshare, a company that develops "practical, affordable, and useful web 2.0 applications built specifically for libraries and educational institutions" (Springshare, 2008), has a product called LibGuides, which the company claims is being used by hundreds of academic libraries in the world as a "content management and information sharing system" to create subject or course-specific guides (Springshare, 2008). Course pages created with LibGuides can be displayed in a CMS.

Librarians hope that linking library resources directly to course assignments will help students use library resources rather than simply turning to their favorite search engine to find information for their research papers. The authors believe that one of the reasons students have chosen not to use library resources is that there are too many options, too many different places in which to search, and too many rules for searching the library catalog and databases. Students are becoming accustomed to finding some sort of answer to their queries by simply typing a few words into a search engine. Thus, this is essentially an attempt to make the library's world of information small enough and relevant enough that students will be better able to discern how to use the vast resources available to them. Based on the feedback received so far, the course pages incorporated in the CMS for a particular class are effective in doing this.

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