Integrating Academic Library Resources and Learning Management Systems: The Library Blackboard Site

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Abstract

This paper discusses a plan for integrating information literacy instruction sessions and other intermediate consumer community links by developing a library presence on a campus online learning management system: Blackboard. On this site, core information literacy tutorials and assessments are augmented with subject area library links, podcasts, blogs and RSS feeds. The academic library Blackboard site also serves as a demonstration model for information and links that are added to faculty Blackboard sites as a means of promoting library resources to their students. A literature review-based analysis examines the extent to which the use of learning management systems improves academic library services.

Twenty-four hours every day, students are likely to be found searching Google, Instant Messaging with friends, and checking email. This new digital world has been referred to as the intermediate consumer community (ICC) (Dempsey, 2005). Due in part to the resources offered in the ICC, the academic library is less often the place for browsing and passing time exploring the stacks for a good book to read.

Despite the changing landscape, the academic library has remained the locus for doing research project assignments (Lewis, 2004). This learning process requires that the student gain skills in information literacy, ask the reference librarian for help, explore subject pages and databases, and find a computer terminal to type up the material. It is critical that the new ICC formats be incorporated so that academic libraries can continue to provide research and information literacy instruction and resources within a structure that students access daily.

Integrating the ICC and academic library resources into a readily accessible framework available to the students has two benefits: 1) the research process can be brought closer to the student's everyday world; 2) the ICC can be utilized to provide greater access to library resources. One common location for this integration is the institution's online learning management system.

Founded in 1997, the Blackboard Company provides e-education enterprise software applications and services that are licensed on a renewable basis. The Blackboard Learning System is the most widely-adopted course management system among U.S. post-secondary institutions (Blackboard, 2006). Basically, these web-based integrated management systems serve as electronic "containers" to store, link, and retrieve documents as well as provide telecommunication tools.

This paper focuses on the Blackboard system, although other learning management systems may provide similar services. All of these systems belong to the ICC, operating externally to the academic library. The Blackboard site may be a stand-alone library shell, or contain modules, pods, and links that

can be copied and transferred to faculty class sites. It would be expected that information literacy modules would form the core of the Blackboard resources offered.

Analysis of library initiatives suggests successful aspects of Blackboard information literacy programs with ICC additions to augment the offerings and provide an attractive, useful magnet for students with information needs.

Literature Review

The Association of College and Research Libraries Association (ACRL) information literacy recommendations rose in part from the need to prepare a mission statement for the effective collaboration among disciplinary faculty libraries. Category 7, "Pedagogy" provides a focal point for discussion.

Pedagogy for an information literacy program:

- supports diverse approaches to teaching
- incorporates appropriate information technology and other media resources
- includes active and collaborative activities
- encompasses critical thinking skills
- responds to multiple learning styles
- supports student-centered learning
- builds on students' existing knowledge; and
- links information literacy to ongoing coursework and real-life experiences appropriate to program and course level (ACRL, 2003).

Of these pedagogical characteristics, “encompasses critical thinking and reflection” and “includes active and collaborative activities” serve as basic tenets of constructivist learning theory, developed by Dewey, Piaget and Bruner. In this view “learning is an individual process that requires the students to actively engage with their environment, to take responsibility for their own learning and to internalize and personalize the knowledge they have gained” (Thomas, 2004, 104). In thinking about the applications of Blackboard in the academic library, the constructivist theory of education seems particularly relevant.

Academic libraries have traditionally focused on the resource aspect of information literacy. Consortia catalogs, interlibrary loan. and document delivery have expanded the materials available to the user. Interlibrary services have begun to merge with commercial online, web-based products. New interfaces and software capabilities have preoccupied technical services.

At the same time that librarians are struggling with traditional technical service (Price, 2006), a new entity is galloping ahead, attracting attention and gathering momentum that cannot be ignored. The intermediate consumer community (ICC) is gathering steam outside of the library and begs to be integrated into the academic library world.

The Apple Corporation, with its progeny iPOD, is aggressively pursuing the academic market. Apple is backing this frenzy with the Podcasting University, now available in a beta-test version on more than 200 campuses nationwide. Academic library workshops on understanding podcasts and how to make them are becoming more frequent. In addition, RSS feeds and blogs are often used by students and are seen as links on various websites within the academic community. The debate on whether to join Instant Messaging and Chat reference consortiums continues in back room library staff cubicles. In and out of the academic library setting, these resources are swirling among students, staff and faculty.

In the past five years, the development of Google Scholar and other search engines, Redlightgreen, Worldcat, blogs, RSS feeds and podcasting have generated the potential for the creation of a completely new program area in academic libraries. Dempsey (2005) writes:

> For example, we might discover that something exists in Google but then be passed to a variety of location and fulfillment services (buy from Amazon, buy from used Booksellser, locate in a nearby library through Open Worldcat, be directed to a local catalog by a resolver routing service).

Nevertheless, the search for articles on the integration of learning management systems into library electronic resources often comes up empty handed depending on the database examined. The paltry results seem to be a function of the lack of creative endeavors in libraries to undertake such a project and the lack of reporting on programs that are being developed (Lewis, 2004).

In many colleges, the one electronic campus location students are most likely to visit daily is the Blackboard site for the classes in which they are enrolled. It meets the criteria for a service that would bring the library and the ICC together. Dempsey (2005) has written:

> End users will still make use of library services in person; however, the model in which library services are consumed by a system that supports a user workflow will become increasingly important. Intermediate consumers of library services will include the learning management system, the enterprise portal, the RSS aggregator, and the search engine…. So librarians must ask: How do I expose services to a search engine, a learning management system, or an RSS aggregator?

On Blackboard, students have the opportunity to check assignments and due dates, attend chat sessions for their group or the whole class, answer queries and comments on the Discussion Board, check grades and posted files on the File Exchange. Often, there are assigned readings and links to articles that can be accessed with a single click on the link. In short, they actively engage in a learning environment in which they choose from a variety of resources and venues.

Based on the literature, there seem to be two points at which the library and the ICC might be integrated to promote interactive learning. The first is the posting of information literacy modules onto Blackboard. The second is the potential for including podcasts, blogs, RSS feeds, Google Scholar and other links on the site. In some cases, the podcasts may be tutorials or modules for the information literacy instruction. This would facilitate a three-way integration of Blackboard, information literacy instruction, and the use of the newer podcasts format for instruction and evaluation.

The potential for integrating information literacy tutorials is evident; they are available and may be adapted to specific library needs. From this beginning, the addition of other ICC resources might be expected to follow in short order. Learning modules and assessments may also be designed specifically to meet the American Library Association (ALA) recommendations or other guidelines that are selected by library staff. Depending on time and monetary resources available, a seamless program of literacy instruction may be developed on Blackboard to provide a stand-alone program with a structured, user-friendly point of entry for students who want to access the library resources any time they have Internet access.

Information Literacy Modules

Information literacy instruction is currently a key component of academic library programs and central to the evaluating academic library by accrediting boards such as the Western Association of Schools and Colleges (WASC). For example, in bringing the University of Texas information literacy tutorial (TILT) to the students at Alfred University, the instructional librarian wrote: "…it wasn't until our Middle States accreditation review was coming up in 2003 that we fully appreciated how this tutorial could bolster our current information literacy efforts" (2003, Roberts).

Integrating information literacy instruction into the Blackboard site for a given course is probably the most effective means of reaching the student in an electronic venue that they visit every day. Roberts (2003) has written, " ….we have not been able to reach every student before he or she graduates, and have not been able to incorporate an assessment peace into our I.L. program. …when we were faced with Middle States and ACRL standards, it became clear that we needed to add some form of assessment to our program" Roberts (2003).

In 1998, the University of Texas System Digital Library developed an online tutorial called the Texas Information Literacy Tutorial (TILT, 2006). This open access program has various modules and an evaluation to assess student learning. TILT has been adopted by other libraries, including Alfred

University. Roberts (2003) writes: "it wasn't until our Middle States accreditation review was coming up in 2003 that we fully appreciated how this tutorial could bolster our current information literacy efforts." For Roberts, the TILT program integration was not a substitute for classroom instruction. Instead, it provided reinforcement for concepts taught, a "stand alone tutorial" for students who did not attend the classroom instruction and a "stand alone assessment" to evaluate learning of the concepts. Using the open access available through TILT, Roberts posted the TILT modules to the Blackboard site, and further adapted the TILT assessment such that it could be placed on the site as well. TILT became a "course offering" on Blackboard, which students could access anytime with their login information. Although successful, Roberts found an improved tutorial at Searchpath (http://www/wmich.edu/library/searchpath), which more effectively used photo images, updated script, and design. Presumably, it could be adapted and integrated into Blackboard since it has an open publication license (Roberts, 2003).

Information literacy instruction is already the basis for class Blackboard sites at some colleges. For example, at St. Mary's College in Moraga, California, Blackboard information literacy tutorials have been used for three years. Every semester, the Instruction Librarian sets up a shell for the Composition 4 and Composition 5 classes. Each Blackboard shell has a common unit of tutorials, a pretest and a posttest available on the class Blackboard site.

One advantage of incorporating tutorials and pre- post-tests into Blackboard is that the scores are automatically recorded as students complete the tests. The faculty has instant feedback as to who has taken the test and the scores obtained on each question as well as in total. Librarians and faculty can then able to evaluate not only the students' performance but also the efficacy of the tests as it becomes apparent that some of the poor scores on some of the questions may have been due more to the improperly worded questions than to the students' subject knowledge.

Besides posting tutorials and assessments on Blackboard, librarians can also set up file exchanges and discussion boards for groups or individuals to share questions or drafts of their research papers. In a single library site, different classes can be partitioned such that they have their own space for providing class resources, file exchange, discussion board, grading, tutorials and assessment. If the tutorials and assessments are moved to individual faculty Blackboard sites, the librarian may still be authenticated to review the class results on the material presented on information literacy.

Administering the tutorial, pre-test and post-test to every class uniformly has costs and benefits. In some institutions, faculty are neither required to use the Blackboard program nor to have their classes attend the instructional sessions provided by the librarians. Transfer students and some others might not have had prior access to the Blackboard tutorials. In addition, many librarians are permitted academic freedom to present the information literacy material as they choose; they may use the tutorials as the basis of the instruction session, but the material and learning approach used may vary widely.

In an academic setting, success in using Blackboard to provide information literacy tutorials and assessments seems to be related to several factors. First, the library instructors fully participate and support the program’s development and implementation. Second, the staff work together to create an agreed-upon list of learning objectives based on the ALA standards. Based on the list, librarian instructors collaborate to design a single pre- and post-test that used in every class. The tests are identical so that a clear indication of whether the material had been learned is evident. Third, the material presented in the classroom meetings reflects the objectives covered in the tutorials and assessments. Whether the classroom material is presented in lecture or more interactive format, the focus is consistent and supported consensually by the librarians. Finally, the librarians and the faculty members reach an agreement early in the semester not only about the learning philosophy and material to be presented but also about the value in having every class participate and support the program. Consistency in the program has many advantages in providing a uniform instructional service to the students. However, given the independence of the academic setting, full collaboration may be difficult to achieve.

Beyond information literacy tutorials and assessment, the Blackboard platform can be used to support assignments and resources useful to the students. For example, the current process that San Jose State University librarian instructors for to set up the information literacy instruction sessions involves several

steps. The librarian contacts the instructor, who typically emails the librarian a copy of the research assignment. The librarian then assembles helpful materials and resource, which are placed on the truck and listed bibliographically in a word file. Third, the librarian compiles a worksheet based on the information and concepts to be covered. This may be specific to a particular class or subject area or may be more generic. Additional printed reference materials and a class evaluation form are sometimes collated into packets for each student. All of these materials may be made available to students on the Blackboard site. Even if some students misplace a printed packet, they can access the resources whenever needed. The Blackboard shell may be retained from one year to the next preempting the need to repeat the preparatory work from year to year.

Podcasting, RSS and Blogs

The continued popularity of Apple's iPod is undisputed. At the Macworld Expo keynote speech on January 10, 2006, Apple CEO Steve Jobs reported sales of over 42 million iPods total, fourteen million in the first quarter of fiscal year 2006 alone (*Wikipedia*, 2006).

Although the earlier generations of iPods were limited to audio transmittal only, more recent models have included video capabilities. In combination with the Apple software program, Garage Band, it is now possible to compose podcasts with amazing audio and visually mixed capabilities. No longer will it be necessary to post text-only tutorials on information literacy; tutorials can offer streaming video and audio productions customized to the particular concepts to be emphasized by an instructor or librarian.

The adoption by the academic community of podcasts is nowhere more evident that at Stanford University. In a cooperative effort with the Apple Corporation, Stanford joined the podcast University beta-testing program. Numerous lectures are available to students and the public in podcast format. These podcasts can be obtained from an aggregator such as Podracer, Podget, or iPodder -- or directly from the university website.

One advantage of podcasts is that they can be downloaded from a desktop or PC, and listened to anywhere an iPod can be taken. For example, a student could download a class lecture and listen to it on the way to class or in preparation for an exam. With respect to the library, a podcast might introduce the student to a particular electronic database, or it might provide the tutorial for an upcoming information literacy class session.

In the context of learning management systems, utilizing podcasts is a means to reach students in a format they use daily. In order to increase student access to the podcasts, the file links may be posted to Blackboard and the library webpage. File can even be cataloged in the library online catalog.

Other formats that may be posted to the Blackboard site include RSS feeds and blogs. An RSS aggregator may be used to select feeds that are current, relevant and subject-based. These feeds could be updated according to the specifications set by the instructor or student. Feeds selected by the instructor would be screened for quality of content. In the same manner, links to blogs could be added to the Blackboard site. The same quality controls could be instituted as for the RSS feeds.

In recent developments, agreements have been made between electronic database vendors and Blackboard. For example, ENCompass provides an interface on Blackboard that allows students to search three different Lexis-Nexis databases. The announcement of the new product included the following description: "…the interaction with the Blackboard Learning System brings library resources to a familiar and comfortable environment and makes it easy for faculty to provide quality library resources as part of their online course setting" (Information Today, 2002).

Analysis

Information literacy instruction tutorials can be the core offering of the academic library Blackboard site. However, Blackboard shells can also be populated with information and connections useful to all users. Most promising content includes supporting resources: subject area material, podcasts, blogs and RSS

feeds. Blackboard shells can be set up by Information Technology (IT) administrators solely for librarian use in their interactions with students. Alternatively, the library site can serve as a focal point for faculty who can then incorporate the resources and links into their own Blackboard shells. Administrator and librarian assistance allow faculty to customize their Blackboard sites to link to the library resources most beneficial to their subject area.

The potential of learning management systems for libraries is obvious. However, in examining libraries' use of Blackboard and other technologies, the query time and again was whether the new formats were an improvement over the prevailing procedures. There is already evidence for the popularity among instruction librarians of the information literacy Blackboard tutorials and assessments. In the academic libraries mentioned above, most of the instruction librarians have utilized tutorials for their classroom session. Evaluation of the student responses to the tutorials' questions has resulted in the recognition that the questions need to be compiled by the entire instructional group. Instruction librarians can add specific information about questions to be asked based on their own familiarity with the subject matter.

Important to keep in mind is that a library Blackboard site requires frequent evaluation to ensure that it meets student information needs in an updated fashion. The links and connections must be checked frequently as websites and database vendors change their offerings. In addition, instruction librarians need to monitor student work to determine whether the students are mastering the material and which information and resource links prove useful as Blackboard records visits to each link. Librarians also have to work with Blackboard administrators to determine if and when there will be expiration dates for their shells.

Copyright restrictions are a major consideration in designing and implementing Blackboard library resources. For example, the instruction librarian has the choice to adopt open access resources such as TILT, pay for proprietary products, or design tutorials and assessments from scratch. Despite the difficulties involved in building tutorials from the ground up, the advantages are clear: instructional librarians will gain knowledge from working on the project, they will be reassured that the concepts taught meet their list of the most salient objectives espoused by the American Library Association and their own curricular needs, and they can choose whether to make their product available under an open access agreement or to protect it with a copyright.

A second copyright consideration relates to the posting of other resources on the Blackboard site. Close attention must be paid to the Fair Use strictures and other guidelines to avoid legal penalties (Russell, 2004). Copyright restrictions may also apply to podcasts, RSS feeds and blogs. Currently, many podcasts have open access. This may change as the value of the program is perceived to increase relative to the merits of making it available to everyone. The same situation holds true for RSS feeds and blogs.

Finally, in thinking about the costs in labor and resource commitment, library staff must determine whether they can allocate sufficient time to develop the program. The advantages of providing a stand-alone tutorial as well as numerous links to online and library resources seem great in number. Once established, the program requires little maintenance, suggesting that the major staffing costs will occur in the near term.

Summary

Overall, it seems that the benefits of establishing a library Blackboard site outweigh the costs incurred upfront in designing and mounting the program. Most importantly, Blackboard connects a constructivist educational approach to library instruction programs. That is, through interactive educational instruction, the student is better able to internalize the information and gain a conceptual understanding of the material. When presented with a similar learning environment in the future, the student can apply these critical thinking skills effectively.

The benefits of utilizing Blackboard to connect the library and students are readily apparent. First, as with the library website, the use of Blackboard provides library resources to students on a 24/7 basis. Moreover, Blackboard has other capabilities such as permitting the students to post files to the

Discussion Board and threads to the File Exchange. Blackboard can be set up by class or for groups within a class, allowing individuals and groups to access Blackboard specifically for their own informational needs. The ability to customize pages and insert assignment and class resource links also benefits the end user. Furthermore, Blackboard provides feedback on student work, facilitates grade posting, and provides a way for students who have missed information literacy sessions to make up their work. The stand-alone tutorials can be utilized at any time or place by students to meet their needs for discussion a particular concept.

In addition, the Blackboard site provides a readily accessible point of entry for users to interact with library resources. It is a method of reaching the students in a format they access every day for their academic classes. The software flexibility enables changes to be made as courses and subject requirements change. In the long term, it can provide for accumulating and building library resources that potentially can be archived and contributed to the library catalog.

In sum, a library Blackboard site provides tutorials, information, and links in a pedagogically viable format that can be accessed by the entire campus community anytime, anywhere. The site can be the focal point for many librarians in one location thus ensuring a consistent, collaborative instructional program. Moreover, the content and links may be transferred to faculty Blackboard sites to ensure further dissemination of the information literacy skills required by the students or retained by the library as an archival collection.

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