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Whitehurst, Angela
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CONTRIBUTED WORKSHOPS

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Cloud Computing for the Research Process
Welcome to the *Fourteenth Off-Campus Library Services Conference Proceedings*. The manuscripts in this volume were evaluated and selected for inclusion by the Conference’s twenty-nine member Program Advisory Board using a juried abstracts process. It is believed that these papers represent the most contemporary and thought-provoking information not only for those of us working in the areas of distance and online librarianship but for our profession as a whole.

Timothy Peters

Jennifer Rundels

Co-Editors
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Thank you to the Central Michigan University Libraries and CMU’s Off-Campus Programs for their continuing sponsorship of this respected national gathering.

Thanks also to Brian Ryckman and Timothy Peters, Conference Co-Coordinators, for all the work they have done during the last two years to make this event a success. And thank you to Jennifer Rundels and Timothy Peters, who acted as the Co-Editors of these Proceedings.

Recognition must also be given to the members of the Conference Program Advisory Board for giving of their time and expertise in the name of evaluating a record number of submitted proposals and selecting the presentations, poster sessions, and workshops that became part of the Fourteenth Off-Campus Library Services Conference.

Appreciation is also extended to the CMU employees outside of the CMU Libraries and Off-Campus Programs who worked hard to provide essential support to the organizers of this event.

And finally, we would like to recognize and thank the members of the Off-Campus Library Services Department at CMU for their efforts and contributions to the Conference: Monica Craig, Thad Dickinson, Anita Gordon, Tammy Knott, Julie LaDell-Thomas, Timothy Peters, Jennifer Rundels, Brian Ryckman, Sharon Southwick, Cindy Worley, and our numerous student employees.
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Library Services for Great Plains IDEA Consortial Students

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Abstract
The Great Plains Interactive Distance Education Alliance is a multi-state alliance of eleven universities that offer online Master’s degrees and certificate programs in human sciences. The authors surveyed librarians at Great Plains IDEA institutions to learn how each library provides distance services to students enrolled in Great Plains IDEA courses offered through this inter-institutional alliance.

Introduction
This paper discusses library services and resources for students enrolled in online courses offered through the Great Plains Interactive Distance Education Alliance (known as Great Plains IDEA). Through this inter-institutional alliance of eleven universities with human sciences colleges, participating institutions deliver fully-online Master’s degree and post-baccalaureate certificate programs in community development, dietetics, family and consumer sciences education, family financial planning, food safety and defense, gerontology, merchandising, and youth development. Universities in eleven states share graduate courses in order to deliver those fully-online programs and certificates. A student is admitted to one participating institution as a ‘home institution’, and takes Great Plains IDEA courses from other participating institutions as well as the home institution.

The Standards for Distance Learning Library Services, which were approved by the Association of College & Research Libraries Board of Directors in July 2008, state that each student is entitled to library resources and services of the respective institution regardless of method of course delivery or location. The Standards specifically mention that each college or university in a multi-institutional cluster has the responsibility for meeting the library needs at the collective site (Association of College & Research Libraries, 2008). Of interest to the authors is the distance library services program at academic libraries for consortial students who are enrolled in multi-institutional distance graduate programs. Since the University of Nebraska-Lincoln is a member of the Great Plains IDEA, the authors chose to explore how each library in the alliance provides distance services to students who are enrolled in the inter-institutional courses.

Consortial associations have been part of the academic landscape since the 1960s, serving as a means for colleges and universities to achieve mutual goals and share resources. Later, universities and colleges established consortia to sustain programs, especially those in low-enrollment, specialized fields. According to the Association for Consortium Leadership, there are more than 125 member consortia in the United States varying both in size and purpose (Glazer-Raymo, 2003).

The authors studied distance library services available to students enrolled in consortial graduate programs and certificates through Great Plains Interactive Distance Education Alliance (IDEA). We developed a survey that was sent to distance librarians at libraries of the member institutions. Research questions included: (a) what library services and resources are offered to Great Plains IDEA students at each institution?; (b) to what degree are library services for consortial distance students similar across the various institutions?; and (c) what issues are there for service delivery to consortial students taking online courses in the Great Plains IDEA programs?

Findings from the study will contribute to the understanding of academic libraries’ current practice in serving students who are enrolled in inter-institutional distance graduate programs. Findings can inform teaching faculty and distance education administrators of specific issues related to consortial students.
taking distance courses. The study results will add to the limited research base regarding library service
delivery to consortial distance students in graduate programs.

**Literature Review**

The authors reviewed the literature on multi-state consortia of universities that offer distance
delivered graduate programs. In particular we wanted to find articles and web sites that addressed library
service to distance learners in graduate online programs. Our search proved to be a challenge. Many
consortia, such as UT Telecampus, Electronic University Consortium of South Dakota, SUNY Learning
Network, and West Virginia Virtual Learning Network, serve students within the state. The Tri-College
Consortium of three institutions in Moorhead, Minnesota and Fargo, North Dakota has offered a graduate
program in Educational Leadership since 1974. While courses are increasingly delivered online, the
program model is residential, and students visit the library on-site at the institutions.

The Western Governors University (WGU) offers several online masters in education. WGU
students have access to a central online library with several major databases, online catalog, and ILLiad
interlibrary loan service from the University of New Mexico General Library.

The Biostatistics Collaboration of Australia (BCA) consortium began in 2001 with eight
universities offering a graduate program in biostatistics via distance. BCA participants collaborated to
develop and deliver the program to meet “the need for workforce and academic capacity building in
biostatistics” (Heller, Forbes, Dear, and Jobling, 2008, p. 321). Each consortial institution recognizes
courses taught by BCA members. Distance students enroll in one of the participating universities and take
courses taught by instructors from BCA institutions. Library service is available from the home institution;
there is no mention of distance learning library services on the www.bca.edu.au web site.

**Case Study**

The Great Plains Interactive Distance Education Alliance (http://www.hsidea.org) is a multi-state
alliance of eleven universities with human sciences colleges offering fully-online graduate programs. The
alliance was formed in 1994 when academic deans from the eight original institutions met to discuss an
idea. The College of Human Resources and Family Sciences at the University of Nebraska-Lincoln (UNL)
had implemented an interdepartmental master’s program via distance education, and the dean asked if other
institutions had distance education graduate courses that could be shared. The idea took hold, but there
were obstacles such as “lack of Internet connectivity for rural professionals (the target demographic), an
absence of commercially available and easy-to-use instructional software, and a paucity of distance
education experience on the part of the faculty” (Moxley and Maes, 2007, p.162). Alliance initiatives were
developed to inform faculty of the changing marketplace for graduate education, train faculty in how to use
technology for graduate courses at a distance, and develop a marketplace for shared distance education
courses (Moxley and Maes, 2007). A team of inter-institutional academic faculty soon responded with a
proposal for a family financial planning program.

Implementation would need more than committed human sciences college faculty and
administrators. The alliance members brought graduate deans, registrars, distance education administrators,
and finance officers into the discussion. Graduate deans developed principles: inter-institutional partners
are equal (graduate faculty status at one institution is recognized by all); institutional differences are
accepted (course numbers, degree titles, and faculty workload are institutional prerogatives); and student
navigation is easy (the student’s home university provides administrative and support services) (Moxley
and Maes, 2007). Principles were developed, and then policies followed. In 2002 ten universities approved
Alliance Bylaws and a Memorandum of Agreement.

The Great Plains IDEA programs are based on student demand and faculty interest. Faculty at one
or more institutions propose and develop the curriculum, and interested partners are identified. The Great
Plains IDEA Board reviews the draft proposal and seeks faculty feedback from each participating
institution. A market analysis is conducted. By 2004 youth development and gerontology graduate
programs were added (“Program Alliance Pools Expertise,” 2004).
In January 2000, the University of Nebraska-Lincoln College of Human Resources and Family Sciences web site stated: “The Great Plains IDEA is a regional consortium of land grant institutions that provide graduate and undergraduate education in family and consumer sciences through extended education programs” (University of Nebraska-Lincoln, 2000, para. 2). Marketing efforts included a brochure announcing the Family Financial Planning master’s and certificate programs. The brochure stated that faculty from universities in six states had developed shared graduate courses in order to deliver graduate programs and certificates in this specialized field.

Later in 2000, the Libraries at the University of Nebraska-Lincoln were informed that a UNL faculty member would be teaching a course as part of the Family Financial Planning program, which was to be offered in conjunction with five other universities. The Libraries had been providing service to distance learners enrolled in the interdepartmental Master’s degree in Human Resources and Family Sciences (HRFS) via distance education since 19941. The dean of libraries stated that library services would be extended to consortial students when enrolled in a consortial course taught by a UNL faculty member. Service for the Great Plains IDEA consortial students would be modeled on the current services offered to UNL distance learners enrolled in graduate programs.

Methodology

The authors’ research is based on a survey of distance librarians at Great Plains IDEA universities. This consortial alliance, consisting of eleven universities with human sciences colleges, currently offers Master’s degree and certificate programs in community development, dietetics, family and consumer sciences education, family financial planning, food safety and defense, gerontology, merchandising, and youth development.

Research questions for the study included: What Great Plains IDEA programs are offered at each institution? What services and resources does the library offer to students enrolled in Great Plains IDEA online courses offered by the university? What methods does the library use to communicate with consortial students? How do librarians at the institution use course management software for instruction to consortial students? Are there service delivery concerns for Great Plains IDEA students? What additional methods can libraries use to support consortial students? Finally, does the library have a web page for distance students?

The survey instrument consisted of 11 questions. Four questions were completely open-ended. Six questions were partially close-ended, offering respondents the opportunity to mark suggested responses as well as expand on answers through comments. One close-ended question asked respondents to mark each Great Plains IDEA program offered by their institution.

The survey and sample cover letter were submitted to the University’s Institutional Review Board for required approval. Survey questions were then formatted using Flashlight Online software to create the survey instrument.

The authors intended to survey one distance librarian at each of the participating Great Plains IDEA institutions. We began by examining the library web pages. As of November 2009, ten of the eleven libraries had a distance education services page. However, only four of those pages identified one individual, or in two instances a group of individuals, as distance librarian contacts. Additional names were located by searching libraries’ staff directories and subject librarian lists. In several cases, phone calls were made.

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1 Cassner and Adams (1998) described the results of their survey of HRFS distance students in The Eighth Off-Campus Library Services Conference Proceedings
Since the survey would be distributed to only one individual at each institution, we sent advance notice of the upcoming survey by email to the list of prospective respondents. We asked for a reply within one week. In two instances recipients referred us to another individual.

An e-mail message was initially sent in November 2009, inviting the designated population to participate in the online survey. The message served as a cover letter, outlining the research study. Respondents were able to click on the link attachment to the online survey. A second email message was sent in December as a final opportunity for participation. Survey recipients were from the following institutions: Colorado State University, Iowa State University, Kansas State University, Michigan State University, University of Missouri, Montana State University, University of Nebraska-Lincoln, North Dakota State University, Oklahoma State University, South Dakota State University, and Texas Tech University.

The survey was anonymous as it did not ask for information that could identify individuals, institutions, or e-mail addresses. As each online survey was submitted, the data was sent to a secure server operated by Flashlight Online. Both raw and compiled data were collected and analyzed by the researchers.

Results

Ten of the 11 librarians invited to participate in the study submitted survey responses through the Flashlight Online link. Below are the questions asked in the survey and answer results. Frequently respondents used the comments boxes to expand on their responses. Selected comments are included with the related question.

Q1. Mark each Great Plains IDEA program offered by your institution.

- Community Development: 2
- Dietetics: 4
- Family and Consumer Science Education: 3
- Family Financial Planning: 4
- Food Safety and Defense: 0
- Gerontology: 2
- Merchandising: 2
- Youth Development: 1

These numbers are lower than the program listings on the Great Plains IDEA website at http://www.hsidea.org (see Discussion section).

Q2. Does your library offer distance library services to students enrolled in Great Plains IDEA online courses offered by your university?

- Yes: 9
- No: 1

Six librarians offered comments. Four respondents reported that all students registered for courses through their universities have access to library services. One added that while she does not check if students are enrolled in Great Plains IDEA courses, she does verify that they are registered as current students. Another librarian indicated that while Great Plains IDEA distance students are not identified as a group, distance services are provided to students who live at least at least 50 miles from campus. One librarian reported that distance services are available to consortial students when faculty from her university teach a Great Plains IDEA course.
Two responded that they were not familiar with the Great Plains IDEA program, but one stated she has worked with students in some of the courses listed.

**Q3. Mark each service your library provides to Great Plains IDEA consortial students.**

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<td>Research assistance consultation with Liaison/Subject Specialist Librarian</td>
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<td>6</td>
<td>Electronic reserves</td>
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<td>7</td>
<td>Document delivery</td>
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<td>6</td>
<td>Traditional interlibrary loan</td>
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Five respondents provided comments. Two confirmed that traditional and distance students enrolled at their institutions have access to all services including those listed above. One librarian stated that reference and research assistance services are open to the public and available virtually to distance students. Another librarian sends a welcome email to consortial students enrolled through her institution. Document delivery of materials, usually in electronic format, is available to consortial students through her library.

**Q4. Mark each resource your library provides to Great Plains IDEA consortial students.**

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<td>Online journal article indexes</td>
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<td>Full-text electronic journals</td>
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<td>Dissertations</td>
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<td>E-books</td>
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<td>5</td>
<td>Online bibliographic citation management systems</td>
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Three respondents reported that their library uses End Note as a citation management system. One respondent stated that the library currently does not have an online citation management system.

**Q5. Mark each research assistance tool your library provides to Great Plains IDEA consortial students.**

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<tr>
<td>4</td>
<td>Tutorials or learning modules</td>
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<td>7</td>
<td>Subject or discipline-specific guides</td>
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<tr>
<td>2</td>
<td>Course-specific web pages or guides</td>
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Two librarians reported that they do not have tutorials or guides but would create these if asked by class instructors. Another stated that their library has very few of these tools and none for the academic programs offered through Great Plains IDEA programs. One librarian reported her library uses LibGuides, while another has tutorials on topics such as preparing literature reviews and using EndNote Web. That librarian also indicated that subject specialist librarians have individual web pages with subject-specific guides. One noted that distance students receive equivalent services and resources including the provision of synchronous library instruction and research consultation via Adobe connect.

**Q6. Does your library have a web page for distance students?**

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<td>8</td>
<td>Yes</td>
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<td>2</td>
<td>No</td>
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One librarian reported that the distance education web page has been streamlined to reduce redundancy on library web pages.
Q7. Mark each method your library uses to communicate with Great Plains IDEA consortial students.

- 2 Twitter
- 2 Facebook/MySpace
- 2 Blogs
- 10 Email
- 1 Skype or other VOIP software
- 9 Traditional phone
- 10 Ask a Librarian service
- 2 Web conferencing

Several respondents indicated that communication mediums are not necessarily marketed to Great Plains IDEA students, but are certainly available to the distance learners. Communication methods included Ask Us page enabling IM chat, toll free phone numbers, and Crafty Syntax Live Help. One respondent stated that various communication methods could be available if requested by instructors.

Q8. How do librarians at your institution use course management software for instruction to students enrolled in Great Plains IDEA consortial courses?

Four librarians indicated that they create library tutorials or research guides for use in Blackboard, ANGEL, or WebCT. Three other respondents use Desire2Learn (D2L). One reports “the library’s presence on D2L provides a Meebo widget for chat reference interactions and links to the library’s home page and the library’s distance library services page.” Another librarian indicated that they use D2L to refer students to liaison librarians and other course-specific assistance. One librarian stated that course instructors have the option of embedding librarians in their D2L courses with a librarian tab.

Q9. What issues are there for service delivery to students in the Great Plains IDEA consortial programs?

Three respondents stated that while anyone can access the library web sites and online catalog, only students registered at their universities are eligible for library services. One said: “Interacting efficiently with Great Plains IDEA students may be more difficult because I’m not sure these students have a university email address, and the appropriate IDS and passwords to access our databases and distance services. If they email us or call us on our toll-free number, we can give them access information.” Similarly, another respondent said that Great Plains IDEA students can become confused when the proxy server asks them to type in the student ID number of another consortial university.

Several stated that traditional interlibrary loan of books does not work for students living out of town due to the time delay of mailing materials. Another considered document delivery and the costs associated with it to be an issue. Also, one librarian indicated the program needs increased promotion and marketing or awareness.

Q10. What are additional ways that libraries can support students enrolled in Great Plains IDEA consortial programs?

Comments included:

- More participation with Blackboard, either on a course-by-course basis or consortial program basis. The distance librarian and liaison librarian could work with GP IDEA faculty to promote use of libraries on the Great Plains IDEA consortial programs web pages.
- Creating web pages listing contact information and basic services and resources offered. These links would be available from all online courses.
- Lots of ways if we know the courses that are being offered.
• Teaching resource use via IVN or Blackboard.
• Tutorials that clarify the process of accessing print and electronic materials for distance students.
• More open access materials.
• Providing consortial access to electronic collections behind a pay wall.

Q11. Additional comments related to providing library services for Great Plains IDEA consortial students.

One respondent commented that the library is planning to obtain LibGuides in support of distance and traditional students. Another stated “we try to treat all the students the same – providing the same services to all.”

Discussion and Conclusion

One of the broad themes of the survey results relates to awareness. Two respondents were unfamiliar with the Great Plains IDEA organization, although one has assisted distance learners enrolled in courses offered through the consortium. In marking which Great Plains IDEA programs are offered at their institution, respondents underreported the specific programs in which their institution participates. For example, eight institutions offer Family Financial Planning, while four respondents marked that program. Four institutions offer Youth Development, and only one respondent checked that program. Course program information is available at http://www.hisidea.org.

Unfamiliarity may be partly due to the complexity of large academic organizations. The name of the consortial program may differ from the name of the administrative home department that offers courses. For instance, at UNL, the Community Development program is offered through the Agricultural Economics Department, and the Family Financial Planning program is offered through the Family and Consumer Sciences Department.

A second broad theme relates to communication. Open communication has been essential to shared curriculum development and local institutional practice. The consortium’s policy and procedure manual lists the library as a component for service to distance students. Including distance librarians in meetings with Great Plains IDEA faculty and administrative staff could be beneficial.

All respondents indicated that they use email and the Ask a Librarian service to communicate with Great Plains IDEA students. All but one librarian use the phone as a communication tool. Conversely, only two librarians indicated that they use Twitter, Facebook/My Space, blogs, and web conferencing. Currently only one librarian uses Skype or other VOIP software to communicate with his group of students. These results are similar to the authors’ 2007 study of the subject specialist librarian’s role in providing distance learning services (Cassner and Adams, 2008).

From our examination of library web pages, only four libraries identified one individual or group of individuals as distance librarian contacts. At other libraries, distance users are directed to a generic “contact us” via phone or email. Distance users are also pointed to a specific service such as ILLiad document delivery or reference assistance. This effort is changing the picture of how distance students contact the libraries.

With the increase of hybrid/online courses, and more student taking online courses, there is less distinction between the distance student population and residential students. The practice today among academic libraries is to make their services and resources transparent to the students. There may likely be a reduced emphasis on a “distance education” service. The ubiquitous use of Ask a Question suggests that the distinction between distance and residential is less important.
Survey results revealed that in most instances, Great Plains IDEA students do have access to equivalent services and resources received by other distance students. The survey has raised the respondents’ awareness of the specialized population of distance learners.

The authors note that the small population group surveyed is a limitation to the study. A follow-up survey might have additional insights into service delivery to graduate students enrolled in inter-institutional distance programs.
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Citation Analyses as a Prioritization Tool for Instruction Program Development

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Abstract
In the past, citation analyses have been used for collection development or to evaluate information literacy instruction effectiveness. These projects often require collaboration with subject-matter experts and are typically backward looking measures. Citation analysis as a forward-looking planning tool for a library's instruction program is less well known. The project acted as a quantitative exploration in order to organize information literacy instruction efforts, program marketing, and the implementation of Capella’s university-wide information literacy outcome. Many problems revealed through the analyses were consistent with results from other universities and library citation analysis efforts: over-reliance on textbooks, improper online sources, lack of retrieval statements, quickly broken links, etc. Specific instruction responses to these widespread issues are discussed. The citation analysis insights influenced both Capella’s information literacy plan development cycle and a re-design effort for all guides, tutorials and residency instruction sessions. The resulting initiatives will require myriad assessment strategies. Future assessment and research possibilities are discussed.

Introduction
Every information literacy program goes through a recalibration phase. In 2009 Capella University Library finally reached the end of a long campaign. Capella had approved information literacy as the eleventh university-wide curriculum outcome. We were already having early success working with top-down implementation of information literacy outcomes for individual programs, yet, essential formal mechanisms for communication were missing.

The ACRL (2003) recommends "establishing formal and informal mechanisms for communication and ongoing dialogue across the academic community" for information literacy program best practices. The informal avenues were innumerable. Despite the youth of Capella's library, our robust liaison program had allowed many levels of promotion for our library instruction program (Brothen, Berg, & Bennett, 2009; Veal & Bennett, 2009). Over 15,000 learners received library guide assignments in 2009 thanks to liaison faculty collaboration. However, this effort was organic and piecemeal. A more formalized top-down promotional mechanism could provide invaluable synchronization for information literacy instruction at Capella.

Capella University has an atypical population of students. Capella is an entirely online university with students in undergraduate, Master’s and doctoral programs in four general areas: business & technology, public services, counseling & psychology, and education. The student body is predominantly post-graduate, and all courses are taught using a Blackboard courseroom.

Capella's unusual composition means that we could not simply generalize from the experiences of other academic libraries. Formative and summative instruction measures were in the early implementation stages inside the information literacy plan but required time to garner assessment data. We needed more immediate tools for raising awareness among school administration.

Hoping to take advantage of the momentum that the new university outcome provided, we looked at what assessment data were available. In order to capture the attention of program administration, we
needed to understand how to prioritize instruction efforts in ways that were both school and degree level specific. Prior to this, the librarians had relied on reference data to inform our understanding of information literacy needs (Brothen, Berg, & Bennett, 2009), but this method is incomplete. A recent survey revealed that a very small percentage of our students ever contact the library. This small group of students was also skewed toward a few of Capella's programs. Relying solely on such a small, self-selected sample could bias priorities and perceptions.

Citation analyses data from Master’s integrative projects seemed the timeliest alternative to our previous methods. Requiring only the bibliographies or reference lists from student work, citation analysis is often less invasive than other forms of instructional evaluation. This makes it an especially useful assessment tool for distance learning since this educational format makes direct access to students more difficult.

Capella's Master’s program comprises the largest body of students at the University. Master’s students at Capella University do not complete a traditional Master’s thesis, but are required to create a final integrative project as part of the capstone course. However, because these students have been away from school for a significant amount of time, many have little experience with online research.

In early 2008, after receiving institutional permission, we began a citation analysis with Human Services and Organizational Management Master’s integrative projects. Full qualitative or mixed method citation review requires a partnership with faculty subject matter experts for independent validation. Instead, ours was a simple quantitative exploration relying on very basic criteria. This seemed the likeliest immediate candidate for fulfilling ACRL's (2003) best practice requirement for formal communication mechanisms.

Why Citation Analysis?

In the past, citation analyses have been used for collection development or to evaluate information literacy instruction effectiveness. These projects are typically backward looking measures, evaluating what has already been done. Citation analysis as a forward-looking planning tool for recalibrating a library’s instruction program is less well known. Most often, citation analysis is quantitative, and "product oriented rather than process-oriented . . . its concern really lies with information use, rather than information seeking" (Shenton, 2004, p. 183). For example, citation analysis can supplement other measurements of use for collection development. This differentiates citation analysis results from other measures of use, such as circulation statistics and reshelving counts.

Citation analysis can have limited utility for collection development, however, since students rarely use resources from outside their home library collection (Gooden, 2001; Haycock, 2004; Leiding, 2005; Sylvia, 1998). The literature on citation analysis as a collection development tool highlights the applicability of Bradford's Law of Scattering, which states that a small number of sources provide the majority of citations (Beile, Boote, & Killingsworth, 2003). Many citation studies show results that support this type of distribution (Beile, Boote, & Killingsworth, 2003, 2004; Chambers & Healey, 1973; Gao, Yu, & Webster, 2007; Gooden, 2001; Thomas, 2000). While most citation analyses for collection development are intended for future purchasing decisions, some evaluate the impact of past changes. Gao, Yu and Webster’s (2007) analysis of Master’s theses -- chosen from years more than a decade apart -- focused on the consequences of changes to collection development policies and library services, such as interlibrary loan. Haycock (2004) notes that this tendency toward convenience mixed with a reliance on citation analysis can lead to "an unfortunate self-perpetuating cycle" where students cite an ever shrinking collection without ever seeing the better resources that exist (p. 103). For this reason citation analysis should not be used exclusively for collection development decisions. Still, citation analysis can highlight unowned journals that are good candidates for future purchases, and call out interdisciplinary journals that are not considered part of a subject's "core" collection (Gao, Yu, & Webster 2007; Sylvia, 1998; Thomas, 2000). Finally, a lack of citations to particular journals can suggest that they are good candidates for deselection (Chambers & Healey, 1973; Thomas, 2000).

Citation analysis is also widely used to examine what types of resources are actually used by
students. Many librarians use citation analysis to look at the type of resources students choose; the scholarliness of those resources; and their currency (Brophy, 2003; Davis, 2002; Davis & Cohen, 2001; Edzan, 2007; Gooden, 2001; Haycock, 2004; Hovde, 2000; Knight-Davis & Sung, 2008; Leiding, 2005; Mohler, 2005; Robinson & Schlegl, 2004; Shanmugam, 2009; Yu, Sullivan, & Woodall, 2005). A few studies have tried to do more subjective analyses, also looking at breadth, depth and relevancy (Beile, Boote, & Killingsworth 2003, 2004; Long & Shrikhande, 2005; Tunon & Brydges, 2005, 2006, 2009).

Many different levels of student bibliographies have been assessed as part of citation analysis projects, from freshman to post-graduate students, with undergraduates receiving the most attention (Davis & Cohen, 2001; Edzan, 2007; Heller-Ross, 2002; Hovde, 2000; Knight-Davis & Sung, 2008; Malone & Videon, 1997; Leiding, 2005; Lombardo & Miree, 2003; Mohler, 2005; Robinson & Schlegl, 2004; Ursin, Lindsay & Johnson, 2004). Students in Master’s programs are less frequently studied, although there are some examples of including graduate students in analysis of undergraduate bibliographies (Long & Shrikhande, 2005; Sylvia, 1998). Other studies look specifically at Master’s theses (Chambers & Healey, 1973; Gao, Yu, & Webster, 2007; Sexton, 2006).

Some authors have analyzed bibliographies in order to measure the effectiveness of library instruction activities. Accompanied with a search log, student bibliographies "should provide a more comprehensive understanding of the effects of search strategy instruction" (Gratch, 1985, p. 177). Hovde (2000) found that undergraduates were using the databases that had been discussed during instruction sessions. Long & Shrikhande (2005) measured the quality of student bibliographies before receiving instruction and after three different instruction sessions, and noticed an improvement due to instruction. Similarly, library instruction was found to change student attitudes to library print resources (Lombardo & Miree, 2003) or inspire usage of specific materials (Yu, Sullivan, & Woodall, 2005). Malone and Videon (1997) and Ursin, Lindsay, and Johnson (2004), however, did not find that specific library instruction improved the quality or type of resources listed in student bibliographies.

Instruction may not be enough to improve student bibliographies. Knight-Davis and Sung (2008) note that "the sources a student will choose to cite are often heavily influenced by the requirements regarding sources, or lack thereof, in the paper assignment" (p. 457). This emphasis on explicit expectations for resources is echoed by Davis and Cohen (2001) who "argue that professors ought to be more prescriptive with the type of literature that they would like to see consulted" (p. 313). Still, it is the power of punishment that seems to have the greatest impact. Robinson & Schlegl (2004) only found a statistically significant effect on scholarly source use when instruction was paired with a grading penalty for improper source use. A lack of grading consequences can actually reduce quality (Jiao, Onwuegbuzie, & Waytowich, 2006, 2008).

A few studies used their results to make changes to instruction priorities. These results can help librarians "plan and prepare improved information skills classes" that focus on specific needs (Yu, Sullivan, & Woodall, 2005, p. 1). Thomas (2000) discovered that less than a quarter of the citations in Social Work Master’s theses were from social work journals. The heavy use of medical journals by social work students suggested to the author that some medical research instruction should be included for Social Work instruction sessions. Beile, Boote, and Killingsworth (2003) saw a more general need amongst doctoral students, who "simply do not possess sufficient knowledge of information resources, expertise in mining the literature of the field, or the ability to consistently discriminate between popular and scholarly resources" (p. 12).

**Methodology**

For this citation study, the authors focused on the two Master’s programs from the pilot initiative: Master of Science in Organizational Management and Master of Science in Human Services. After applying for permission through Capella University’s Office of Assessment and Institutional Research, we were able to collect both the course requirements and all of the submitted papers for the capstone courses in the fourth quarter of 2007 and first quarter of 2008. Enrollment in the Human Services capstone course was more than double that for Organizational Management. In order to have a large enough sample of papers for Organizational Management, the authors included papers from both quarters, while limiting to the first
quarter of 2008 for Human Services.1

We chose to collect fifty papers from each program. This was close to the total number of students in two quarters of Organizational Management, and we did not want to extend our analysis over a longer stretch of time. We also felt that fifty papers would give us enough information to make decisions about instructional activities. Students in each section were assigned a random number using Microsoft Excel's random number generator. In order to have a total of 50 papers for each Master’s program, we divided that number by the number of sections. Then, the papers with the lowest random numbers were collected from each section. This process collected approximately the same number of papers from each section, allowing us to avoid over representing a single instructor. The final count of papers in this study was 49 for Organizational Management and 50 for Human Services.

Reviewers decided on mutual analysis criteria in advance. Each paper was given an anonymous ID number and added to a spreadsheet that recorded the total number of pages, the total number of citations and the number of unique citations. The bibliography of any given paper was not included in the total number of pages. A citation was considered unique if no other citation on the reference list came from the same journal or website. This was to check for heavy use of a single journal title within a paper. After analyzing all the citations, the number of citations from peer-reviewed journals was recorded for each paper, and the percentage of peer-reviewed journal citations was calculated.

All citations were copied and pasted into a spreadsheet. For each citation the journal name or sponsoring body (association, corporation, publisher, etc.) was recorded, as was the date, type of resource, and retrieval information. All retrieval information was checked to see if it followed basic APA citation rules for retrieval information; continued to link directly to the document; or linked to the home page of the website. To determine whether a journal was peer reviewed, every journal was looked up in Ulrichsweb.com. All journal titles were also checked against library holdings. Finally, all books were compared against the course textbook lists for Q4 2007 and Q1 2008. This list is maintained by the Interlibrary Loan Librarian, so that students cannot request required textbooks using the interlibrary loan service.

**Differences in School Methodology**

One of the most important findings from the review emphasized the different instruction and criteria needs for the different disciplines. One major goal of this citation analysis was to determine what types of resources were actually used by students. That includes resources of different levels of scholarliness and validity, or resources from outside the discipline (Thomas, 2000). After an initial review, the reviewers met to redefine citation source types, based on the observation that the types of resources differed slightly between the two programs. Some categories were unnecessary.

The different natures of the research topics in Human Services and Organizational Management meant that slightly different categories emerged for each. Both included categories for books, textbooks, conference proceedings, dissertation/theses, peer-reviewed articles, and "other". Human Services also categorized items as reference books, popular serials, trade journals, and websites from government, education, professional associations, and general websites. Organizational Management combined print popular and trade journals in one category and did not use the reference books category.

Organizational Management also focused more closely on the different categories of web citations, since it had a larger pool and variety. It included categories for corporate websites, military websites, a separate government website category, a web news/trade journal category, and combined only professional association and education websites in a single category. Print resources from the military were also given a category. Since analysis reports would ultimately be tailored for school-specific audiences, we felt the slightly different categories were justified.

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1Capella updates online courses using a centralized development process, and there were no substantive changes to the course requirements between those two quarters.
Findings

Library Use

The citation analysis acted as a tool to assess both our learners’ needs and our preconceptions about them. We came into this process with a number of assumptions about instructional priorities, developed through our direct experience with the minority of learners who we encounter directly. The librarians answer phone and email reference questions, and give instruction sessions to doctoral students at periodic residencies. These limited opportunities for interaction with students cannot cover the breadth of resource decisions students make, and they fail to account for the skill level of students who chose not to speak directly with a librarian.

For instance, many reference questions center on the improper use of our Journal & Book Locator link resolver tool. Librarians on reference frequently try to help students extend their journal usage beyond the one or two journals their instructor mentioned. We had assumed, therefore, that learners were using Journal & Book Locator as their primary search tool, instead of the library's databases. We fully expected to see bibliographies dominated by the contents of a single journal or even a single issue of a journal. Our citation results did not bear this out. Very few papers included a lot of resource repetition, and those repeatedly using the same source were mostly reusing a website. Organizational Management had on average 18 citations per paper, with an average of 16.4 unique citations. Human Services was very similar, with average of 22.6 citations per paper and 19.1 unique. This suggests that students may be abandoning Journal & Book Locator as their main search tool, either due to library instruction or their own experiences with it.

Another myth that we frequently encounter among our students is the perception that "everything (including scholarly research) is available online" and generic search engine usage is, therefore, sufficient for post-graduate research. When surveyed, students report using the web as a first stop for research (OCLC, 2002). While we cannot know if students are actually using the library, we did find that over 90% of the articles listed in bibliographies are available in the library's electronic databases. The databases most often recommended by librarians were also the databases that had the most content listed in those bibliographies. In Organizational Management, ABI/INFORM and Business Source Complete were the databases that appeared most frequently, while Academic Search Premier and SocINDEX contained the highest number of articles from the Human Services citations.

Resource Type

The types of resources used in Master’s level research differed by discipline. Organizational Management students often need company information that will not come from peer-reviewed journal articles, but Human Services students may be able to use scholarly literature exclusively. For example, reference interactions with Human Services learners are often developmental, focusing on the basics of finding resources in the library. This program prefers phone transactions over email, and calls are often lengthy with these aspiring counselors. We had assumed, therefore, that Human Services learners may be using less peer-reviewed literature than other schools. Conversely, Organizational Management students tend to ask fewer basic reference questions, leading us to believe that their bibliographies would be more scholarly. Instead, 59% of the items listed in Human Services bibliographies were peer-reviewed versus only 18% in Organizational Management. The Organizational Management bibliographies showed a much higher reliance on trade literature, websites, and books.

Similarly, the expectation in an Organizational Management program is that many students will need to find company information. The results showed that company information was included in searches, most often in the form of corporate websites (47 citations) or online financial information sites (such as Yahoo! Finance), but that Hoover's was rarely used (only three times) and the in-depth company dossiers from LexisNexis were not used at all. This suggests that we should work on marketing the LexisNexis content and provide more LexisNexis search help for users.
The finding that surprised the authors the most was the high rate of book usage. Because of our focus on graduate programs and exclusively online collection, Capella Library's collection is heavily weighted toward journal articles. We have collected books with the intention of providing solid background information, and the limitations of most ebook platforms make using ebooks less appealing than the typical electronic journal article. It did not occur to us that students would be using a significant number of books, and that those books would be so heavily weighted toward course textbooks. We found that in Organizational Management, a full 28% of all citations were for books, and of those books, 62% of them were known textbooks. The total numbers were a bit lower in Human Services, with books accounting for 21% of citations, and 67% of those listed as textbooks. The proportion that are textbooks may actually be a bit low, since we don't know how many of the books were textbooks from previous versions of courses or from undergraduate courses. High rates of book use at the Master’s level is not unheard of. Shanmugam (2009) found that 77.51% of citations in postgraduate papers were for books, including many textbooks. Gao, Yu, and Webster (2007) found book usage ranging from 34% to 54%. Several studies of Doctoral dissertations also show book use above 20%, although they do not indicate how many are textbooks (Beile, Boote, & Kilingsworth, 2003; Brophy, Fisher & Booth, 2003; Haycock, 2004).

Some other assumptions were legitimized. Many learners in the School of Business and Technology are active or former military service men and women, and we assumed that many of them would be drawn to military research topics. While not constituting a large minority of the cited resources, there were several different military resources in our citation results. They only totaled 2% of all citations, but there were several papers heavily weighted toward them. Military resources, as well as some internal corporate websites, are often behind firewalls. This may not preclude their use, but it is a point of instruction that is currently not part of our information literacy activities.

We knew anecdotally that individual schools have individual instruction needs, but this process allowed us to diagnose very specific issues with direct evidence. It is now evident that the schools are at very different levels of competence with research. Scholarly articles are used at very different rates between the two programs, and there is a high reliance on websites in Organizational Management. The high use of textbooks also suggests that students are doing less library research on their topics than the size of the bibliographies would suggest.

Citation Creation Problems

We had underestimated citation accuracy issues prior to this study. Very few bibliographies were consistently and correctly using APA style, even though it is a requirement for all courses at Capella University. Most citations provided the basic information required in a citation, but a surprising number of citations were seriously incomplete or garbled. Most articles were probably accessed online, but less than half included retrieval information.

Had we consulted the literature first, we would have known this finding was common. As noted in the citation analysis literature, many citations for electronic items lack retrieval information (Beile, Boote, & Kilingsworth, 2003, 2004; Brophy, Fisher & Booth, 2003; Malone & Videon, 1997; Mohler, 2005; Sexton, 2006; Tunon & Brydges, 2005). We found similar results. When we checked the cited journals against the library's collections, we found that over 90% of all the trade and scholarly literature was in the library. Yet only 43% of all the Organizational Management citations for journal articles included a retrieval statement. In a few instances we were completely unable to verify what resource the citation was for, and at other times we noticed missing or inaccurate citation information. We were not checking citations for accuracy, and the frequency with which we noted problems suggests that it may be extremely widespread.

Regardless of the type of student, citation mistakes are prevalent (Edzan, 2007; Shanmugam, 2009; Yu, Sullivan, & Woodall, 2005; Thomas, 2000). While many types of mistakes and omissions can occur in a citation, lack of retrieval information is highlighted by several studies which showed very low inclusion of a retrieval statement despite high probability of electronic article use (Beile, Boote & Killingsworth, 2003, 2004; Brophy, Fisher & Booth, 2003; Malone & Videon, 1997; Mohler, 2005; Sexton,
2006; Tunon & Brydges, 2005). Jiao, Onwuegbuzie, & Waytowich (2008) found a citation error rate of almost 32% in a dissertation preparation course, and noticed error rates that ranged from 5% to 90.91% (2006). Citation errors were associated with high levels of library anxiety and higher numbers of completed courses, suggesting that students were noticing a lack of interest in proper citation among faculty, and changing their behavior accordingly.

Many web citations lacked important details, such as author names and dates. In Organizational Management there were 214 citations for websites—24% of all citations—and 7% of those citations included only the URL with no other citation information. It is difficult to know why internet citations are so incomplete. It may be time management, since learners have to create website citations from scratch, rather than starting with a citation generated by the library databases. Or it may be lack of understanding about the format of websites, or an inability to identify a specific type of resource when it is in on the internet. Our anecdotal experience from reference questions about citations for websites, suggest that students fail to identify document types in electronic form, despite being able to do so in print form.

Even when retrieval information is included, the impermanence of web pages means that many citations will list resources that are now lost. Hovde (2007) found that electronic citations were becoming more popular, and that .com sites were simultaneously the most commonly used, and the least likely to remain accessible. In other studies of web permanence, only half to two thirds of links led to the document (Davis & Cohen, 2001; Davis, 2002; Sellitto, 2005). In the case of Organizational Management bibliographies, which had the highest use of websites, after 18 months 33% of the citations were now broken links.

Results

Resource Type

Immediately after compiling our findings, we approached the different schools. There are varied standards for scholarship in varied disciplines, so determining whether or not these results are acceptable depends on the faculty expectations about resources in each program. (For instance, humanities disciplines rely much more on books than science disciplines.) The librarians sent a summary of results and a request for a meeting to the chairs of the School of Human Services and the School of Business and Technology. Human Services school administrators quickly agreed to meet and included leaders from the School of Psychology as well. The meeting with school leadership focused on three basic outcomes: (a) raising awareness of student actions; (b) clarifying what resources the chairs expected their students to be using; and (c) deciding on specific changes that can be implemented by the library.

The library made some progress in all three areas. School administration was very interested in our results, and suggested that the library work on faculty training to help make instructors more aware of library resources. Most importantly, they recommended that our message focus on solutions for faculty. They do not have to be experts on library instruction; merely, know how to recognize citation issues and refer learners to the library appropriately.

We also discovered that the library’s tacit understanding of Master’s level research was very close to that held by the school leadership. While the librarians have had ample opportunity to talk to faculty about Doctoral research expectations in the past, this was the first time we have been able to align our ideas with those of faculty for Master’s students. Differentiating Master’s expectations from undergraduate expectations is not currently emphasized in library instruction resources, although we have been increasingly using frank language about Doctoral level expectations in our instruction. We now plan to include clear language about Master’s level library research expectations inside our Master’s guides and tutorials, and work to clearly point Master’s students to relevant library guides. This effort will be helped by our current transfer to LibGuides, which allows us to easily group resources, guides and tutorials for specific groups of students.

The librarians also broached the possibility of modifying grading rubrics. Through the citation analysis project, we learned that the current annotated bibliography rubric for courses does not explicitly
define resource requirements, assuming that directions for "current research" are sufficient. As part of our outreach to the different programs and to the Writing Center faculty, we intend to encourage delineation of more specific bibliography requirements. For instance: How many books are acceptable? How many resources should be used? And how many of those should be peer reviewed or primary? This information in rubric form may help faculty enforce those requirements and also guide us in our instruction activities. Of course, this will require ongoing negotiation, since faculty may view this as limiting their own evaluative freedom.

The library will be developing many program-specific library guides within the next year, and we can increase emphasis on specific topics in those guides to help enforce the preferences of the schools. These guides are often linked inside of courses, and are some of the most downloaded guides in the library. Through existing librarian involvement in the course development process, we have been able to include specific library help in the online course room at the point of need. This citation analysis has mobilized enthusiasm for library instruction. Faculty have generally been excited to include library content whenever we provide help that is focused. They have also demanded particular focus on setting expectations for new students in regard to their information literacy skill development. Human Services faculty, for instance, have requested a counseling-specific LibGuide, emphasizing the expectations of Master’s level research.

Citation Creation Problems

Capella University requires all students to use APA for all course assignments, but instruction and enforcement of APA standards is diffuse throughout the university. Most faculty will notify students of errors, but limit their focus on teaching proper APA, presuming that post-graduate learners are self-directed. The Capella Online Writing Center currently produces APA training modules, but they do not answer direct questions from students about APA. As a result, the library gets hundreds of citation and APA formatting questions annually through our reference service.

The results of this study show that our students, like all other students, do struggle with creating APA citations for electronic resources. The citation analysis emphasized that the library has a measure of responsibility to improve this issue, even though the Writing Center has traditionally governed APA style instruction. Inability to create citations is often tied to an inability to identify the resource or identify the elements of a citation. These skills are directly related to the library's role in developing information literacy. To that end, a librarian was included on the university-wide committee for APA 6th edition transition. While on this committee the librarian was able to advocate for APA instruction modifications that reflected the needs and experiences of Capella students. The librarian on the committee also created a two-page APA decision chart to help students create citations for commonly used online materials such as journal articles and ebooks. This chart was also sent to all faculty to help students who struggle with citing electronic literature.

Differentiating instruction by level will also be a new challenge for our pedagogy. This was requested by school administration, and Master’s level students comprise the bulk of our student body, yet very few models for postgraduate information literacy instruction exist since the ACRL has instead chosen to focus on discipline-specific information literacy standards instead (e.g., 2004, 2006, and 2008). The library has recently defined information learning outcomes for each level of proficiency (e.g., Novice, Advanced, and Expert) with the intention that Master’s learners fulfill the novice and advanced competencies. This has led to a suite of tutorials that scaffold instruction through screencasting, demonstrations, interactive exercises and formative and summative assessment measures. These will debut in 2010, fueling our information literacy plan and curriculum implementation strategy.

Limitations

The focus of our citation analysis was relatively narrow and was therefore fairly limited. We did not include a subjective analysis of bibliographies or the use of resources within the body of the paper, since our focus was on timely results for awareness-raising with an internal audience. We were unable to
include faculty or other subject matter experts in this pilot study, though we plan to do so with our next stage of this initiative. We also did not check the bibliography or individual citations for accuracy.

Examining bibliographies to determine actual resource use is not without danger of misrepresentation as Sylvia (1998) notes, "the author of a paper may not cite all the works actually used in its preparation. Alternatively, but equally troubling, the author may cite materials that contributed marginally, if at all, to the research" (p. 21). We do not know if items in the bibliographies were actually used within the paper; if they came from the resources listed in the citations; or if they even exist at all. Only the permanence of website URLs was examined.

We also did not take grades into account. While we did not notice a normal grade curve distribution as we collected the citations, we did not record what grades individual bibliographies actually received. School administration was curious to know if there was a connection between the grade received and the quality of the resources used, but we did not pursue that question at this time. Instead, we approached the integrative project sample for this explorative analysis as a summative representation of the learners’ library research skills. Of course, this does not take into account our many library instruction initiatives since 2007. Learners completing their integrative projects in early 2008 may have received minimal library instruction, since Capella's in-house library was formed in 2007. We hope to compare this study's dataset with a later sample to gauge whether library instruction efforts since 2007 have had a significant impact.

We were also unable to look at all papers we identified in our initial selection. In some cases a technical issue meant that the paper was sent to the instructor directly, and not through the courseroom. While rare, those papers were unavailable to us, and were replaced by the next paper in that section if one was available. This could conceivably amount to a form of self-selection that would impact the results of our analysis. For example, students with fewer online skills may have had to use email instead of the courseroom submission tool, and might also show poorer use of websites in their papers. Sections listed about 10 - 20 students each, although there may have been some students who dropped the course and were removed from the online courseroom. Any students who did not complete the capstone paper were not included in our analysis.

Although we did look for required textbooks, some required readings may have been missed as well. Article titles were not compared against the required article readings for courses. Many required article readings are from the library's databases, and it was impossible for us to know which articles were taken from a past syllabus or another student's discussion post versus those which were found in a database search. This is especially troubling considering the frequency of textbook use we found. And even that may be undercounted, since many learners take courses over several years, and textbooks can change during that time.

**Future Research**

Information literacy program development at Capella will continue to be guided by many levels of assessment. A single citation analysis can quickly bring specific instruction needs to the forefront for a specific administrative audience. It can serve as an attention-getting promotional tool for instruction services. However, it cannot be depended on exclusively. A number of different assessment measures will enhance our citation analysis findings as we prioritize instruction goals. Our "Evaluation of Online Information" tutorial, created using the insights from this analysis, has been designed to include assessment reporting measures. Data from this tutorial will be analyzed and the tutorial will be revised according to the Information Literacy Instruction Assessment Cycle (Oakleaf, 2009). We hope to collaborate with faculty partners to perform a more rigorous qualitative citation analysis, including stricter coding standards and interreliability tests.

Capella University also has two other Master’s programs, in Psychology and Education, and we plan to do a similar analysis of their bibliographies. (The current Public Safety Master's program was included in the School of Human Services at the time the integrative projects were collected.) The large differences between the two programs we investigated suggest that the results for the two other programs
may be very different as well. Capella Library uses a liaison model for interaction with the different programs, which allows us to develop some expertise and focus on very program-specific resources. As we discover needs in other programs through future citation analysis, we will be able to recalibrate pedagogy in regard to these programs as well. The School of Psychology is particularly interested in comparing citations from early 2008 to current citations, since they have debuted a number of instruction initiatives, including an embedded librarian pilot in all introductory courses.

The papers we chose were also from early on in the Library's tenure at Capella University. In the two years since these papers were written, the librarians have been involved in course development; an embedded librarian program; and the creation of many guides and tutorials. Since many of the Master’s students nearing completion of their program today have no experience with an outsourced library, it may be helpful to look at recent bibliographies for Organizational Management and Human Services. That would provide some degree of evaluation of our recent information literacy activities.
References


Embedded Librarians and Reference Traffic: A Quantitative Analysis

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Abstract
In 2007, Capella University librarians began an embedded librarian pilot in the School of Psychology post-graduate first courses. Embedded librarian programs give librarians the opportunity to meet distance students in their natural habitats by participating in classroom instruction. This is a relatively new area in library research. An analysis of Capella's 2007 library reference traffic revealed a 400% jump in reference transactions with Psychology students, coinciding with the introduction of the embedded librarian program. This study establishes a statistically significant relationship between the number of embedded librarian interactions in the classroom and the increased number of general reference transactions. While this study may provide an encouraging case for libraries considering an embedded program who want to advertise their help services, it might also provide a discouraging case study for libraries who hope to drive down general reference questions through embedded librarian initiatives. Potential for future research is discussed.

Introduction
Embedded librarianship offers a fairly new arena for library research. This service has emerged as one of the most effective avenues of instructional collaboration between distance education faculty and librarians (Figa, Bone, & Maepherson, 2009; Shepley, 2009). The term “embedded librarian” derives from a similar phrase “embedded journalist” (Shumaker, 2009). Whereas embedded journalists are integrated into the reporting environment, often following military units into war zones, embedded librarians are integrated into the user environment, where they can provide services to their clients or patrons at the point of need and maintain a user-centric approach to library resources and services (Kesselman & Watstein, 2009).

While academic librarians can be embedded physically or virtually, the recent explosion of literature on virtual embedded librarianship shows that integrating librarians and library services into the online classroom is the growing trend, and a necessary one. With the rapid rise in the enrollment rates for online classes (York & Vance, 2009), the Association of College and Research Libraries (ACRL) "Standards for Distance Learning Library Services" (2008) calls for all libraries with distance education students to maintain equal or equivalent access to library resources and services for remote learners as they do for their on-campus counterparts.

Scalability of Embedded Work

The popularity of embedded librarianship, coinciding with times of recession and university assessment, has led to frequent conversations about instruction model scalability. The ACRL approved direct cooperation and team teaching with other discipline faculty as a library instruction best practice (ACRL, 2003). Certainly, direct access to a librarian in the classroom benefits students in many ways. Most significantly, librarians are available to the students at their point of need (Shumaker & Tyler, 2007). When a student contacts a librarian for assignment help at the reference desk-- physical or virtual-- much time is spent by both the student re-explaining the assignment and the reference librarian, who must depend on the reference interview to understand the assignment and identify appropriate resources (Chesnut, Henderson, Schlipp, & Zai, 2009).
In contrast, the embedded librarian understands the course assignments and their context in the overall course material, and they are able to provide students with individualized assistance and feedback and recommend the appropriate resources to complete the assignment. Because the librarians are so directly involved in the course, they are able to identify potential points of need due to tricky assignments or troublesome assignment language and offer assistance proactively and to many more students at a time than in a traditional reference interaction (Lillard, 2003; Figa et al., 2009).

At the same time, curriculum integrated models of information literacy have been argued to reach a greater number of students more efficiently than the section-by-section collaborative approach to teaching that we generally see in the embedded librarian model (Eland, 2008; D’Angelo & Maid, 2004). Capella University Library's liaison model allows for high impact in this regard. Librarians are assigned as liaisons to individual "schools" (e.g. School of Education, School of Psychology, etc), and Capella's centralized course development structure lets liaisons improve classroom research assignments systematically.

Once a library guide or tutorial is implemented into a course, it will stay in all sections, uniformly delivering its content, until the course is next revised. Liaison librarians work closely with faculty on course development and implementing information literacy outcomes programatically, and we have written about how reference data helps liaison librarians determine instructional prioritization (Brothen, Berg, & Bennett, 2009). However, the question arises: Where is our time best spent instructionally? Section-by-section individual instruction, or on wider curriculum initiatives?

The purpose of this study is not to provide a solution to the debate of co-teaching librarians versus curriculum designers. However, there is an aspect of this conversation about instruction scalability that has remained untouched in the literature, and one that particularly concerns Capella Library. Whereas many libraries suffer from reference decline, Capella has the reverse trend. Capella's reference data initiatives allow library staff to keep very close watch on school and learner reference needs (Brothen, Berg, & Bennett, 2009), and since moving the library in-house in 2007, reference calls and emails have risen dramatically. Capella's embedded librarian programs also launched in 2007. At that time we saw a very specific reference trend arise, leading to questions about the link between reference services and embedded librarianship. This study offers an introductory exploration of the relationship between the two.

**Embedding Library Links**

In general, there are two methods academic libraries are using to embed library resources and services into the online classroom: 1) Embedding the library at the “macro-level” by providing direct links to library resources including databases, subjects guides, library contact information, etc. 2) Embedding the library at a more customized “micro-level” by placing a librarian directly into the online classroom as a co-instructor (Gibbons, 2005). Capella Library has piloted both models.

Simply embedding library links or resources into the online classroom offers one of the easiest, most scalable, and least time-consuming measures an academic library can take to provide equitable library access for their remote student populations and increased visibility of library resources (Shank & Dewald, 2003; York & Vance, 2009). This allows students taking online courses a seamless and convenient way to access library databases, tools, suggested web resources, subject or research guides, Ask a Librarian features, etc, and creates a “high level of uniformity” in the online classroom (Gibbons, 2005). However, one of the biggest criticisms of merely including links in the classroom is the lack of human contact and personalized connection that is needed to begin building a relationship with the library and the librarian. In fact, Shank and Dewald (2003) assert that without contact and assistance from a librarian when it is needed, students “may not be able to develop their search skills and utilize the full power of the databases to locate the most appropriate resources for their class assignments” (p. 40). Embedded librarians can offer that solution.
Embedding a Librarian

Since Capella University is an online institution, embedded librarianship offers a natural opportunity for the Capella University librarians to provide point-of-need first course instruction. Three models of embedded work were originally tested in 2007. New students in the School of Undergraduate Studies received library guides designed for the specific unit’s course work and a library-specific discussion thread. The librarian appeared in the course for three individual weeks during the quarter. The School of Education followed a similar model, providing a discussion thread for questions to the librarian throughout the quarter. These pilot embedded programs ended in early 2008, though any guides and tutorials that were added remained inside the courses.

Capella’s School of Psychology tested a more rigorous, enclosed, and durable embedded librarian model, engaging students in a variety of ways, including active involvement in the discussion board, creating a library-specific discussion thread, posting “daily tips” posts with general search tips and strategies, and embedding links to library guides and resources (Figa et al., 2009). In the Psychology pilot, one weekly unit was devoted to "Meeting the Librarian" with dedicated assignments intended to help develop library technical skills. The unit offers a multimedia introduction to the library and links to several instructional resources: our PRIMO award-winning Information Literacy website, a step-by-step guide for their first search, and several tutorials on evaluating information. After viewing introductory tutorials and guides, learners were required to post a reflection on their questions, successes, and struggles in the discussion area, and the librarian would respond to each learners post with any feedback, advice, or suggestions.

One of the greatest points of need for many students is at the beginning of any higher education degree program. Students seeking bachelor’s degrees, many straight out of high school, may not understand what it means to conduct academic research. For students seeking advanced degrees, many of whom might be adult students returning after several years of working in their fields, graduate and doctoral level research is different and more intensive than the research undergraduates conduct. It is important for librarians to teach these students the appropriate research skills and techniques that will carry them through the rest of their program. To echo the point, in a survey of nursing students in an embedded librarian classroom, many believed that while having a librarian in the classroom was a good service, it would be much more useful to students just starting out in their programs (Lillard, Norwood, Wise, Brooks, & Kitts, 2009).

One of the justifications that we used for creating the embedded program was the high percentage of calls from First Courses. Since we collect information on every reference transaction, we were able to approach faculty with specific numbers. Veal and Bennett (2009) note that the intent of the program was advocacy:

All students at Capella University are required to take a course called First Course at the beginning of their program. This course introduces them to the theories and practices of the specific program in which they are enrolled. The liaison librarians chose to focus on participation in this course as a way to both introduce students to the library and to encourage them, early in their academic careers, to seek assistance from the librarian anytime they encountered obstacles in their research (p.167).

However, we had also presumed that point-of-need embedded instruction would help ameliorate reference needs for new learners.

Reference Decline

Reference decline is another timely topic in the literature. At first glance, it seems unrelated to embedded work; these sections of the literature have evolved separately. However, as we compare these two trends, we find there is a unique relationship. A decline in the number of reference transactions taking place in public and academic libraries has been documented throughout the literature for several years (Cheng, Bischof, & Nathanson, 2002; Duke, MacDonald, & Trimble, 2009; Martell, 2008; Tenopir, 2001;
Thomsett-Scott & Reese, 2006; Zabel, 2005). After analyzing six years of references statistics at the University of Illinois at Chicago Library of the Health Sciences, DeGroote (2005) found a steady decrease in the number of reference transactions from 1997-2000 with a sharp drop from 1999-2000. Applegate (2008) also found that from 2002-2004 the “average American academic library” saw an approximate 2.2% decline in the total number of reference transactions, with doctoral institutions seeing a statistically larger drop.

There have been many assertions as to what might be causing the decline in reference enquiries: increase in the use and availability of electronic resources; more effective use of OPACs and electronic sources (Murray & Tschenitz, 2004); increased use of global reference services like AskNow, QuestionPoint, Internet Public Library, and Global Librarian (Thomsett-Scott & Reese, 2006); more students taking online courses; or the fact that some students do not want to ask for help because they are embarrassed and feel it is a sign of ignorance or failure (Atlas, 2005). Likely, the two biggest culprits for reference decline in academic libraries are the increase of electronic resource use and availability and the increased number of students enrolled in online courses.

In the last two decades, the budget needs and range of electronic resources available to students and faculty have increased exponentially, with libraries choosing to focus on web-based resources that reach tens of thousands of end-users instead of only a few (Martell, 2007; Tenopir & Ennis, 2001). These easily accessible, web-based resources make it very convenient for students enrolled in online courses to do all their research in the comfort of their own home, dorm, office, etc. And because more students are accessing library resources from off-campus (Cheng et al., 2002) they do not see the reference desk and may not see the “Ask a Librarian” feature on the library’s website, nor know there is a librarian available to assist them (Duke et al., 2009). Corroborating this assertion, the University of North Texas (UNT) has seen a 97% increase in their online course enrollment from 1998-2004. In that same time frame, reference questions at the UNT Libraries decreased 28%, drawing a plausible relationship (Thomsett-Scott & Reese, 2006).

However, digital reference transactions (e-mail and chat) are increasing. DeGroote (2005) noted a 500% increase in e-mail reference from when it was introduced in 1997 to when the study ended in 2003. Likewise, Thomsett-Scott and Reese (2006) found a 602% jump in e-mail reference from 1998-2004 and a 370% increase in chat reference from its initiation in 2000 to 2004. But this increase has not made up for the decrease seen at the physical reference desk, resulting in the overall decline in recorded reference transactions.

Relationship between Embedded Librarians and Reference Enquiries

There is conflicting evidence in the literature as to whether teaching, bibliographic instruction, or embedding a librarian in the online classroom increases or decreases reference transactions. Several studies infer that teaching students how to use the library, including through formal bibliographic instruction, library orientations, in-class presentations, and more effective promotion of subject and course research guides may be one explanation for reference decline (Applegate, 2008; Martell, 2008; Tenopir & Ennis, 2001; Thomsett-Scott & Reese, 2006). Others, however, believe that teaching and bibliographic instruction actually drives up reference statistics. C. Paul Vincent (1984) asserts that bibliographic instruction shows students just how complex the library is and the countless information resources that are available to them, thus increasing the number and sophistication of reference enquiries.

Though reference enquiries in total are down, librarians are seeing an increase in the complexity of questions they are receiving (Murray & Tschenitz, 2004; Zabel, 2005). DeGroote, Hitchcock, and McGowan (2007), Leahy (2003), and Tenopir and Ennis (2001) all believe this is because students and faculty have become more sophisticated researchers, and are able to start exploring relevant databases and resources on their own before contacting the library for research assistance. DeGroote et al.’s (2007) study in particular implies a reference trend that is moving away from traditional ready reference to answers that entail far more instruction and in-depth research.

Consequently, this increase in complexity is causing librarians to spend more time answering those reference questions. Tenopir and Ennis (2001) claim that the increase in electronic resources means
more time is spent searching the myriad resources, as well as instructing the patron in the use of those resources. Additionally, the increase in accessibility of electronic resources to library patrons off-site may require the librarian to re-search sources the patron has already tried to ensure nothing was missed and the source was utilized correctly.

Furthermore, not only has the complexity and time spent on today’s reference questions increased, many libraries are reporting an increase in the number of reference questions per librarian. This is because library staffs are not growing at the same rate as student populations. From 2002 to 2004, Applegate (2008) found that (except for Association of Research Libraries (ARL) institutions) the number of students per librarian increased over 5%. She also asserts that institutions catering to master’s students are likely feeling the largest increase, as librarians at master's institutions in an average week receive 50 questions per librarian as compared to the 40 questions per librarian at doctoral or baccalaureate institutions.

In 2003, Saunders published a study that measured the effect of bibliographic instruction on reference demand. He found there was a positive correlation with reference increasing 2-7 questions per person receiving library instruction. This is likely due to both the increased awareness of the complexity of the library and to the introduction of the librarian to the students, making their presence and availability for research help known. In fact, much of the embedded librarian literature echoes this sentiment. The instruction work of embedded librarians is no different from the instruction work of librarians teaching students face-to-face (York & Vance, 2009), and the initial contact and interaction with librarians is continuously cited as the reason students in the embedded classroom are much more likely to continue seeking assistance from a librarian, proactively reaching out for research help even after their course is ended (Bielema, Crocker, Miller, Reynolds-Moehrle, & Shaw, 2007; Bozeman & Owens, 2008; Dinwiddie, 2005; Markgraf, 2004).

Based on a quantitative analysis and correlation of embedded interactions and reference interactions, we intend to show that there is indeed a positive correlation between the number of interactions the librarian has with students in the online classroom, and the number of reference questions the library receives from that same population. This introductory study, though limited to a single population, should offer new scale considerations for institutions seeking to start an embedded librarian program, as well as a call for wider research on the interplay between library instruction and reference levels.

Methods

The Psychology embedded librarian program began in September 2007. In the Psychology First Courses, embedded librarian support was originally provided in the discussion thread, consisting of one daily post. The embedded librarian would only respond to questions that were directly submitted in the daily post thread. This was later deemed insufficient to help new learners acclimate to the library, and more discussion involvement was launched.

In their 2009 study, Figa, Bone, and Macpherson analyzed three years of pre- and post-course surveys from students who had taken an online course with an embedded librarian. They found that 96.97% of students felt that the discussion area was the most effective format for student/librarian communications. While a few students indicated they were shy about posting questions publicly for others in their course to see, 93.94% of students surveyed felt that there were benefits to seeing what other students had asked. Likewise, students who are more experienced researchers are able to share their own search techniques and experiences with those who may have less experience researching, allowing students to learn from one another.

We observed that many new students offered poor library advice, in addition to the sporadic good advice given by experienced students. Therefore, due to faculty interest and student-to-student misinformation, the librarian began attempting to respond at least once to each discussion post in the first library assignment in January 2008. Reference data from that time shows an enormous jump in transactions, both at the start of the embedded program in September 2007 and when librarians began
responding to every learner post in January 2008. Reference requests from psychology students increased from 244 in the Summer quarter before the initiative started to 482 requests in Fall quarter, and again to 612 in Winter quarter (Figure 1). This far outpaced both Psychology enrollment and reference increases in other schools.

![Reference increases from Capella's School of Psychology, January 2007 – January 2009.](image)

**Figure 1:** Reference increases from Capella’s School of Psychology, January 2007 – January 2009.

A majority of the methodologies used in embedded librarian research have been qualitative (case studies, surveys, and interviews of students, faculty, and librarians), while a majority of the methodologies used in reference research have been quantitative (statistically analyzing the rate and persistence of reference transaction over a period of time). However, accurately tracking reference statistics is notoriously divergent throughout academic libraries (Applegate, 2008). Saunders' article “The effect of bibliographic instruction on the demand for reference services” (2003) made a quantitative measure of the effect of face-to-face library instruction on reference services in a physical library. However, there has not been a quantitative study on the correlation between an embedded librarian in the online classroom and reference services in a virtual library.

Capella Library has unique capacity for monitoring the impact of the embedded pilot on psychology student reference questions. Capella Librarians manually enter information about each reference transaction into a database created using Microsoft Access software. The data currently collected includes the time received, time answered, the time it takes to answer the question, the course number, question type, patron type, school, and question format. Users’ personal data and other identifying information is not captured. Data from our Access database is pulled on the tenth of each month for the previous month and saved in Excel worksheets. The number of reference transactions from the school of psychology students was extracted from these monthly reports.

The frequency data for classroom posts were collected from the discussion area for each course section. Blackboard/WebCT tallies the number of posts from each user, and each librarian post is
accompanied by a signature with general library contact information. A scatter plot diagram was used to visually examine association, form, strength, and outliers. Both correlation analysis and linear regression modeling allows us to examine the strength and the direction of the relationship between datasets. SPSS was used to perform all data analysis.

**Population**

Capella’s student population is mostly graduate students, equally divided between master's and doctoral programs, in addition to a small undergraduate population. Currently, 70% of learners are female. Additionally, 45% are learners of color and 14% are serving in the military. Most students are considered non-traditional, as 39 is the average student age. Fourteen percent of Capella’s learners are enrolled in Psychology programs.

All learners enrolled in the three Psychology First Courses are included in the Embedded Librarian initiative: master’s, General Psychology doctoral, and Counseling Psychology doctoral. Two of the courses restart with fresh students on a monthly basis: master’s and General Psychology doctoral. The First Course for doctoral Counseling Psychology only restarts with fresh students each quarter and generally comprises just one section with approximately twenty learners, so its presence is small. The master's-level first course tends to have twice as many sections as the doctoral-level first course each month.

**Research Question**

Does the number of discussion posts from the Reference Librarian inside the classroom significantly relate to the number of general monthly library reference questions from the School of Psychology?

The null hypothesis is \( \rho = 0 \); the alternative hypothesis is \( \rho \neq 0 \).

**Results**

Scatter plot diagrams were used to visually examine association, form, strength and outliers. The scatter plot diagram shows a correlation and positive association between number of embedded librarian posts and reference transactions from the school of psychology.

The following analytical analyses were conducted: exploratory analyses to assess means, standard errors of the means, standard deviations, skewness, and kurtosis; correlative analyses to evaluate the relationships among the variables; correlation analyses to assess the predictive value of the variables; and linear regression analyses. The level of significance was set at .05.

A correlation analysis allows us to examine the strength and the direction of the relationship. The Pearson correlation analysis showed a significant relationship between embedded librarian discussion posts and psychology reference transactions, \( r(22) = .5, p < .05 \). A linear regression model demonstrated a positive relationship between psychology reference questions (\( \beta = 0.491, P < 0.01 \)) and embedded discussion posts.
Table 1

Descriptive Statistics for Psychology Reference and Embedded Posts

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>PsyRef</td>
<td>194.59</td>
<td>51.413</td>
<td>22</td>
</tr>
<tr>
<td>Posts</td>
<td>125.68</td>
<td>86.696</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 2

Correlations for Psychology Reference and Embedded Posts

<table>
<thead>
<tr>
<th></th>
<th>PsyRef</th>
<th>Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>.491</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PsyRef Posts</td>
<td></td>
<td>.010</td>
</tr>
<tr>
<td>N</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 3

Coefficients\(^a\) for Linear Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>158.029</td>
<td>17.513</td>
</tr>
<tr>
<td>Posts</td>
<td>.291</td>
<td>.116</td>
</tr>
</tbody>
</table>

(a. Dependent Variable: PsyRef)

Conclusion and Implications

We believe there are several implications that can be drawn from this study, although these must be viewed in light of the exploratory nature of the findings. Each reference librarian post includes library contact information, and many learners take multiple courses at once, so it is not inconceivable that the number of posts would have an immediate impact on reference transactions over all. This research suggests that the number of embedded librarian posts holds an impact for reference usage. We can conclude that the number of librarian posts is related to the number of reference calls to a significant degree. Certainly, the timing of the reference number increases, coinciding with embedded program landmarks, suggest a connection.

The embedded model presented might therefore offer some strategic guidelines for libraries looking to boost dwindling reference services or start an embedded librarian initiative with rapid results. In an online environment librarians cannot drum up business by wandering the stacks looking for confused learners. Yet, Capella’s reference has increased significantly each year, in no small part due to the increase
in Psychology questions. The Psychology embedded model is more scalable from a staffing standpoint than other embedded pilots since librarians only appear for one week of the quarter.

However, as has been noted by the embedded librarians in the Capella University Library and throughout the embedded literature, providing the level of access and personalized service required of the embedded librarian model is an intensely time consuming process (Bielema et al., 2007; Drumm & Havens, 2006; Shank & Dewald, 2003; York & Vance, 2009). Figa et al. (2009) estimate that the embedded librarian generally averages 5-7 hours per week reading, researching for, and responding to students’ posts, questions, and issues for just one course. While this has been justified by the fact that far more people are being reached than in the average one-on-one reference transaction (Figa et al., 2009), this is not a scalable service for most academic libraries. The greatest challenge for continuing the embedded librarian model is to find a less labor-intensive means of serving distance learning students, while still maintaining the same level of personalization that is so critical for embedded librarianship.

From the comments and feedback the embedded librarians have received in the Capella University Library, it is clear that students and faculty value and appreciate this service, which has been a consistent theme throughout the literature. It is important for the faculty member, instructor, or professor in a course to vocalize their support of the embedded librarian to their students. When an instructor emphasizes the importance of the librarian as a resource for students, more weight and value are added to the librarian’s presence and students are much more likely to reach out the embedded librarian for assistance (Markgraf, 2004; Matthew & Schroeder, 2006; York & Vance, 2009). In Figa et al.’s student survey analysis (2009), an overwhelming majority (96.67%) believed that the embedded librarian was a valuable addition to the course and a positive experience. And not only are students able to ask questions, build relationships, and interact with a librarian in a familiar and comfortable setting, but faculty and instructors also benefit from “the knowledge and support the librarian can offer their students” (Shepley, 2009, p. 94).

To help alleviate the large time commitment required of the embedded librarians in the Capella University Library, they have created a “Knowledge Base” of responses for reoccurring themes and questions in learner posts. This Knowledge Base allows the librarians to quickly copy and paste generic answers into the classroom and then add a layer of customization to personalize the response and ensure it is meeting the learner's unique question. However, as the student population begins to grow and more students and sections are added to the Psychology First Courses, this model is still not scalable under the current staffing model. Just as Bielema et al. (2007) found, as the embedded librarians are added to more and more courses – the time commitment increases exponentially. This is an area that needs to be addressed if the concept of an embedded librarian continues both at Capella University and other academic institutions.

**Future Research**

Just because significance is established does not mean that the number of posts solely causes the increase. The strength of the relationship between embedded librarianship and reference requires further exploration, with a much wider population. This is simply meant to be a starting point in a very young arena of study. The significance of the relationship does not indicate the strength, longevity or whether this initiative would have a similar effect in other institutions.

In addition, the strict number of reference calls does not reveal the instructional merit of the unit, or whether it has instilled confidence or confusion. Evidence suggests that this pilot gives learners confidence to contact the library early and often, possibly helping them build skills over time. However, other methodological approaches such as mixed methods will have to be considered to establish the motivation behind First Course reference class.

We could not test aspects of embedded involvement, such as the effect of guides and classroom language at this time. We do, however, hope to work with institutional research to study attrition in regard to different models of embedded librarian support. If libraries can connect attrition to embedded librarian involvement, many points in the debate of staff scalability will be rendered moot.
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Linking Students to Library Resources through the Learning Management System

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Abstract
This article describes Carmen Library Link, a tool created at Ohio State University, which enables librarians to create customized library resource pages that are delivered to students within their courses in the Learning Management System. The article will discuss the need for the tool, how collaboration made the tool possible and how a librarian at a regional campus has used Carmen Library Link to reach students more effectively.

Introduction
Research and use of library resources have long been critical parts of the educational process, no matter how students attended class, via correspondence course, Learning Management System (LMS), regional campus, main campus, or some combination. The challenge to provide meaningful assistance to all of these students predates many of the tools available today. The exciting thing about working in today's environment is the variety of methods by which a student can pursue higher education and research and, in turn, the many ways librarians can support them. With these vast options however, comes a cost. A Project Information Literacy Progress Report published in 2009 found that "the proliferation of digital information resources make conducting research uniquely paradoxical: Research seems to be far more difficult to conduct in the digital age than it did in previous times" [emphasis in original work] (Head & Eisenberg, 2009, p. 2).

To further complicate the situation, librarians and students approach the research process differently. Librarians have long produced subject guides to resources within a discipline to help students find research materials. The problem is that the students they are intended to help are often unable to match their information needs with the appropriate guide(s) (Reeb & Gibbons, 2004). Undergraduates in particular seek information based on course assignments (Nichols & Mellinger, 2007). These issues are exacerbated when trying to reach distance and regional campus students because there are fewer opportunities for librarians to provide instruction. Distance students might never set foot on campus, let alone visit the library. At a regional campus there is often only one or two professional librarians to serve courses across the entire curriculum, unlike at a main campus which will often have librarians who specialize in a discipline.

To address these issues, Ohio State University Libraries created a system, named Carmen Library Link, to make library materials available to students through the Learning Management System (LMS). The tool developed permits librarians to build collections of resources that can be delivered in pages built at two different subject levels (college or academic department) or at a course level, but would always be delivered to students at the course level, inside the LMS.

The creation of the Carmen Library Link required close collaboration between the Systems Librarian and the Learning Technology section of the Office of the Chief Information Officer at Ohio State on the technology side and with librarians throughout the system on the content and interface side. This paper will discuss Carmen Library Link, the collaboration that made it happen and the impact it has had in reaching students at the Marion regional campus.
Literature Review

The need for library involvement in a learning management system is well documented in the literature (Bell & Shank, 2004; Cohen, 2002; Flecker & McLean, 2004; Gibbons, 2005a, 2005b). Authors agree that the integration of library resources into learning management systems has the potential to significantly enrich the educational experience of students and increase student use of library materials. The challenges, however, are formidable. Learning management systems at many institutions are selected and managed by the university Information Technology (IT) departments; the selection process often may involve teaching faculty to some degree but rarely librarians (Bell & Shank, 2004). To further complicate integration, the library resources themselves present significant technical challenges because they are delivered according to the providers’ interest, not the libraries. In addition, the field of materials is quite diverse. Together all of these issues create high barriers to finding and reusing digital materials in a course context (Gibbons, 2005).

Libraries generally have taken either a macro or a micro approach to integrating library resources into the learning management system (Shank & Dewald, 2003). A macro level approach delivers the same link or list of resources to all students in the LMS, such as a link to the library website or a global pathfinder created especially for this purpose. The macro approach attains the goal of a library presence in the LMS in a scalable way that reaches many students with a single pathfinder. The downside is that the guides will need to be either very broad or too overwhelming a list to be as useful as more specific resource guides might be. The micro level approach involves individual librarians working with individual courses to integrate specific resources and other services as appropriate in support of an individual course. The micro level approach fully integrates the library and the librarian into the learning taking place in the course and ensures that the materials and services are appropriate for that course. The downside to the micro approach is the amount of labor involved, making it scale poorly.

North Carolina State University (NCSU) attempted to create guides targeted to each course but found that the hand-authored method only achieved 3% coverage. They instead built a local application that would provide a central data-driven system to manage the generic and discipline-specific content on pages and leave only the more targeted content elements to librarian intervention. Their system, called Course Views, delivers a combination of content widgets at differing levels of customization using a cascading content authoring and display scheme. This system has resulted in a 10-fold increase in delivery of course pages in the LMS (Casden, Duckett, Sierra, & Ryan, 2009).

In order to gain the benefits of both the macro and the micro level approaches while mitigating their shortcomings, Ohio State University Libraries embarked on a toolkit approach that involved four pieces: delivery of electronic reserves through the LMS, technical work to ensure seamless authentication to paid resources from links within the LMS, creation of a special Librarian role in the LMS, and delivery of a customizable library resource page within the LMS called the Carmen Library Link (Black, 2008). (Carmen is the name given to the LMS at Ohio State University.) The Carmen Library Link application is similar in approach to that taken at NCSU in that it provides for the reuse of common elements and the pulling together of these content pieces to deliver customized content that students see at the course level.

Librarians serving regional and distance education students have found that these traditionally hard to reach students find the convenience of library resource assess via the LMS very popular. Niyati P. Pandya described increased participation with students after becoming involved in using Blackboard, concluding that integration of a library module in Blackboard and the work with faculty that brought it about "made it possible to extend one-time library sessions to a semester-long presence" in a course. (Pandya, 2007, para. 11) This was confirmed for the Marion Campus of Ohio State University in work done in 2006 to move the delivery of electronic reserves through the LMS (Blankenship & Wood, 2009).
Description of Carmen Library Link

The Environment

Ohio State University is the second largest university in the United States with a total enrollment of 63,217 students for autumn quarter 2009 (Ohio State University, 2009). Of this number, 8,203 did not attend classes on the Columbus Campus. The Marion Campus Library is one of four regional campuses of Ohio State University, not counting the Ohio Agricultural Research and Development Center (OARDC) and Agricultural Technical Institute (ATI). Some regional campuses have multiple locations to serve. The Marion Campus has a satellite location in Delaware, Ohio, serving over 900 students per quarter. Each regional campus library has its own staff and budget and reports to their campus administration but is also a part of Ohio State University Libraries. The Marion Campus library has one professional librarian and two staff members. The Director/Head Librarian handles all instruction along with other administrative duties. The Marion Campus Library serves the Ohio State Marion Delaware Center students and faculty but provides only a service site there, which is not a complete library.

The Carmen Library Link

The Carmen Library Link delivers a page of library resources to students when they click the link labeled Library within every course page in the Learning Management System (LMS). Because the resource list appears in the convenient location of the LMS and within the confines of their course, the library resources are more likely to be in the flow of the student's course work.

Librarians creating these pages work in an editor that is entirely removed from the LMS and which uses a building block approach to encourage them to reuse elements. The smallest element is an item, which is a link to a resource and a description. Special item types facilitate paid database access and offer text boxes for librarian instruction. Items are put together into widgets, which become the building blocks of pages (See Figure 1). For example, a librarian might have an item describing the library catalog that is part of a widget titled ‘Find Books’ that is on many different pages in hundreds of courses. When a change is made to that one item, it needs to be made only once to update all of those pages.
Librarians have choices for delivery of pages. They connect the page to a college, an academic department or a course. The Carmen Library Link delivers the most specific page available when a student clicks the link in the LMS labeled Library (See Figure 2). The Carmen Library Link permits librarians to work in the general discipline area, where they are most comfortable and which is most similar to the subject guides librarians have written for years, but for the content to be delivered in a manner more suited to the way students approach their work, by course. Also, this delivery method makes it possible for the service to scale to serve the entire curriculum with a small group of librarians, an issue especially important for the librarians serving at regional campuses.

Collaboration Required

At Ohio State University, the LMS, a Desire2Learn system branded Carmen, is managed by the Learning Technology unit within the Office of the CIO, the university IT department. Ohio State University Libraries sit organizationally separate with a reporting line to the Office of Academic Affairs instead. To further complicate the situation, the regional libraries report to their campus administration and maintain only a liaison relationship with the main campus OSU Libraries organization. It required a collaborative approach and an adherence to a strong shared goal to achieve the creation of the Carmen Library Link.

It took several meetings of the initial project group, made up of members of the Libraries and the Learning Technology units, to come to a shared understanding of the goals of the project. This led to the group reorganizing into a core leadership group with the project leads from each organization guiding 3 small working groups focused on smaller parts of the project. These parts were delivering electronic reserves through the LMS, ensuring the authentication passed from the LMS to the paid databases through the Libraries EZproxy service and exploring the idea of adding a library resource page to the LMS. The goal pursued was a scalable way to delivery subject appropriate resources within all LMS courses. The leadership group took the approach with the Carmen Library Link portion to do a series of pilots to test different elements of the possible service and application and to bring in different partners to explore the
concepts in these pilots. It was during the second pilot, in collaboration with the Course Enhancement Grant project, which shared the goal of integration of library resources into courses, that the regional librarians joined the project team and the real power of the tool for reaching regional campus and distance education students was discovered.

The Carmen Library Link project also enabled collaboration between librarians and teaching faculty. The Marion Campus Librarian, along with a Marion campus Education professor, received a Course Enhancement Grant, spring quarter 2008, from Ohio State University Libraries to incorporate more library resources into the course Education Theory & Learning 460: Child Guidance. The librarian attended a workshop and received training led by the Systems Librarian to develop and beta test a special link labeled Library to be embedded in the education course. This pilot focused on the content requirements of the resource pages. The librarian and the course professor determined what information needed to be included on the resource page and constructed a basic layout with the content using Microsoft Word. They sent this document to Columbus where it was translated into an appropriate html page by the project team and embedded in the course navigation bar. Students had access via that navigation bar when the instructor activated the course. The librarian visited the class and provided additional instruction along with a demonstration of the Carmen Library Link. A paper survey, conducted at the end of quarter showed that over half of the students had accessed the resource page between 1-5 times, with others accessing it 6 or more times. Comments solicited from students regarding intrinsic value of the Carmen Library Link mentioned it being easy to use, timesaving and helpful.

The Education professor was very enthusiastic about the collaboration and asked the librarian to continue this access in any future courses taught. Even though the Carmen Library Link was not available to regional campus librarians from summer quarter 2008 thru spring quarter 2009 because the editor and integration with Carmen were in development, the librarian continued to provide resource links within individual courses. The librarian became more familiar with use of the Learning Management System, Carmen, and was given Librarian or Instructor status to add and maintain content in several education and history courses. This delivery method was inferior to the Carmen Library Link because these links added additional bulk within the course content and often required students to scroll down to find necessary resource links.

Results

In spring 2009, a fully functioning Carmen Library Link editor was unveiled, requiring training to create resource pages with items and widgets. The editor, being much easier to work with, did not require extensive technical knowledge to use. During spring and summer quarters of 2009, all interested librarians received training and encouragement to build pages in preparation for Learning Technology adding the link labeled Library to all courses in the LMS beginning with autumn quarter 2009. The Marion Campus librarian developed 10 department pages over the course of summer 2009. Each page provided local library information along with specially created widgets of resource items. Faculty members were invited to review and make suggestions for content. Department pages developed included Chemistry, Education Theory and Learning, Education Policy and Leadership, Psychology, English, Sociology, Geography, History, Anthropology and Earth Science and an individual course page for Arts & Sciences 120D: Internet Tools & Research Techniques. Two individual course pages were developed and tested during summer quarter 2009. One class, USAS100, was online and one course, EDU T&L 674 was a physical course. The librarian explained Carmen Library Link and how to access and use it. A short online survey was given to the USAS100 class and a paper survey was administered in the EDU T&L 674 class. Unfortunately, due to a broken link discovered late, the online class could not assess the Carmen Library Link in their course and few, if any, completed the survey. The education class results provided a good sampling on the use of the Carmen Library Link. 10 out of 11 students used the resource page at some point during the course. Again, comments by education students indicated satisfaction, appreciation, ease of access, and its ability to help students locate resources quickly.

The Marion Campus librarian taught 10 in-person class instruction sessions during autumn quarter 2009, reaching approximately 261 students. By using the Carmen Library Link via the 10 department pages and one individual course page developed, the librarian theoretically reached 143 courses taught on the
Marion campus and at the Ohio State Marion-Delaware Center. The number may not be realistic, as it is not possible to determine which courses actually used Carmen during autumn quarter 2009 and which ones she visited that had Carmen access. Nevertheless, this access is far beyond what has been accomplished in the past with only class instruction. One course page developed was a new subject area, Anthropology, for which no class instruction or research assistance had been given in the past. With other subject courses, like Chemistry, which do not require any research, the librarian was still able to provide convenient access to some relevant resources to those students. With all courses, the librarian provided the necessary local information (i.e. web access, library contact info and librarian information), ensuring a local library connection. In addition, using the Carmen Library Link, the librarian provided the Delaware Center students, a group that is more difficult to serve as there is no actual library located there and few instructors request instruction sessions, with useful resources.

The use of the Carmen Link editor enabled the Marion Campus Librarian to develop a significant number of pages in a relatively short amount of time and did not require vast technical skill or knowledge. A straightforward training workshop provided necessary skills to create items, widgets and finally resource pages. The librarian focused on local information and customized resources relevant to the Marion courses. Further, the librarian engaged faculty in suggesting resources needed/desired for their courses by offering to use the Carmen Library Link to deliver a variety of links, including websites, citation information, catalog and database access as well as highlighting other useful information for the students.

Conclusion

Students are course-centric in their work and library resources need to be presented to them in that context in a convenient place. As more and more courses move to Learning Management Systems, especially for distance education students who have fewer opportunities for librarian instruction and regional campus libraries with fewer staff to provide instruction, it is essential that library resources be present in the LMS. At the same time, librarians are faced with increasing demands on their time and resources so these efforts must be scalable. The solution found at Ohio State University was to work collaboratively to create a system that meets these needs and provides room for growth.

Student survey comments on the Carmen Library Link reflected their satisfaction and appreciation for the easy access and relevant resources:

"This is very valuable. A quick easier access."

"So helpful, I don't know how we did research in the old days." [I think this sums it all up, in my opinion!]

"They helped me tremendously & were insightful."

"If this instruction had not been made available (sic), I would have been lost as to how to go about my particular research & knowledge of the resources made available."

"It saved much time & was very easy to access."

When asked if they would use course-specific resources if made available in other courses, students replied:

"I would use them. I think they had great information in the area for the course."

"Yes, it would make things easier!"

"Yes, I would use this. In the past Biology courses require journals and with it being my freshman year I was lost and suffered the consequences."

"Yes! Would help speed research up which would allow for more knowledge to be found."
References


Virtual Delivery of Electronic Resources and Services to Off-Campus Users: A Multi-Faceted Approach

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Abstract
As technologies have evolved and the concept of a true virtual library becomes a reality, the line between campus and distance learners continues to blur. Past and current technological change has driven Rochester Institute of Technology (RIT) Libraries to continually explore new methods of accessibility and delivery to all users. With the use of software applications such as Drupal, Desire2Learn, the MetaLib X-Server, EZProxy, and ILLiad, the ability to virtually deploy resources in a multitude of ways has enabled library collections to be more accessible to everyone, particularly those learning from a distance and have allowed user interfaces to function seamlessly and robustly to the user. The development of customized “Meet Your Librarian” web pages for each reference librarian provides built in contact information via IM widgets and has brought human expertise as well as collections to the users’ desktops. These pages also include subject specific content such as custom tutorials, subject guides, and program relevant information. Technological advances in instruction methods now allow library instruction to be delivered to remote users via online tutorials, Adobe Connect, and the Access Grid. The success of employing multiple approaches to delivering library services and collections to distance learners that are as robust as those delivered to learners on campus is highlighted.

Background
Rochester Institute of Technology, (RIT) located in western New York, currently enrolls nearly 17,000 students, representing all 50 states and more than 100 foreign countries. RIT also has international campuses in Croatia, Dubai, and Kosovo. Among approximately the top dozen largest undergraduate private universities in the US (Destler, 2009), RIT consists of eight colleges, and is considered a leader in professional and career-oriented education. Although known as a “tech school”, RIT offers more than 200 programs of study in art and design, business, engineering, science and mathematics, criminal justice, photography, environmental studies, hospitality and service management, computer science, information technology, bioinformatics and many other areas as well. It grants Bachelor, Master and PhD degrees (RIT, Overview, 2009).

The RIT campus also includes the National Technical Institute of Technology (NTID), the nation’s largest technological college for the deaf. NTID is one of RIT’s eight colleges. NTID currently enrolls more than 1,400 deaf and hard-of-hearing students (Destler, 2009) who live, study and work side by side with hearing students on the campus.

Tracing its founding roots back to 1829, Rochester Institute of Technology, was originally known as the Athenaeum. Captain Henry Lomb served as the first president of the Board of Trustees of RIT’s predecessor, Mechanics Institute (RIT, History of, 2009). It is believed to be he who referred to the Institute’s mission as providing “an education for the making of a living and the living of a life”. Those simple words have served as a backbone and philosophy carrying RIT successfully into the 21st century.

A cornerstone of an RIT education is its cooperative education program. RIT’s co-op program is one of the oldest and largest in the world. The co-operative education program at RIT is different from
most internship programs in that it is full-time, paid work experience directly related to the program of study. Annually, approximately 3,600 students complete more than 5,400 co-operative education work assignments with a variety of different companies, ranging in size and scope. Over the past year, RIT students earned more than $30 million through their co-operative education work experiences. The nearly 2,000 companies that partner with RIT for these opportunities are members of industry, government, and the not-for-profit sector in the U.S. and in 40 foreign countries as well (RIT, Cooperative Education, 2009).

Although the founding of RIT dates back to 1829, it has been granting four year degrees only since 1955 (RIT, History of, 2009). The growth of new programs and the expansion of the physical campus itself has been exponential since its relocation from the City of Rochester to suburban Henrietta, south of Rochester, in 1968. The campus had outgrown its city location and the decision was made to purchase land and build a new campus in the suburbs in 1964. The new campus was ready and the actual move took place four years later. The campus has continued growing in both program offerings and its physical structure and currently consists of 238 buildings on the 1,300 acre campus site (RIT, Fast Facts, 2009). Recent additions to the expanding campus landscape include The Center for Student Innovation, a space intended to foster collaboration, creativity and innovation across disciplines and The Campus Center which will support a variety of student-centered activities. Current construction is underway on Global Village, a retail marketplace and housing complex designed to enhance the student’s global experience on campus. Ongoing campus growth reflects the university’s commitment to broadening and enriching the RIT student experience (Stella, 2009).

RIT is not a typical four year university. RIT is a tech school, but, it is also nationally recognized for its art, photography and print programs, and its School for American Crafts where students study glass, metal, and wood. Being home to the National Technical School for the Deaf brings another element of value and interest to our student body as well. When referring to RIT students and their collective talent, RIT President, Bill Destler applauds the University’s unique mix of artists and designers on the one hand, and scientists, engineers, and business leaders on the other. He recognizes the value of RIT’s unique blend of right brain and left brain activity on campus (Lindsley, 2008).

Evolution of Library Services

Keeping pace with the Institute, RIT Libraries has a rich history of innovation and of offering state of the art services to all of our users in an environment of rapid technological change. RIT Libraries has a reputation for being an early adopter of advances in the information science field that have led to improvements in the delivery of traditional and nontraditional library services.

Like all academic libraries, RIT Libraries has experienced phenomenal change in the past two decades as libraries have evolved from repositories of locally housed print collections centered on the “library as place” into “gateways” for the electronic delivery of diverse resources and services; connections growing increasingly more important than a physical space. Throughout this evolution, RIT Libraries has led both the campus and the library community with many first-of-its-kind initiatives. RIT Libraries brought the first “gopher” to campus and offered one of the first email help services. Major campus initiatives such as the introduction of the first major Drupal (Austin and Harris, 2008) website and the publication of the first open access scholarly journals at RIT have also been driven by RIT Libraries. The early 1990’s saw RIT Libraries featured on a local news broadcast as the first library in the area to introduce CD-ROM technology to its users, the first step in establishing a reputation as a technology leader outside RIT’s campus boundaries.

RIT Libraries was acknowledged for its impact with the receipt of the 2006 ACRL Excellence in Academic Libraries Award. This national award, sponsored by Blackwell’s Book Services and the Association of College and Research Libraries, recognizes the staff of a university, college or community college library for programs delivering exemplary services to further the educational mission of an institution, and acknowledges staff collaboration and innovation in particular. RIT Libraries received the
award in recognition of its commitment to strategic planning and vision for the transformation of the library to meet the future academic needs of the institute as RIT expands its degree programs and increases enrollment.

The year 2009 has brought transformative change at a higher level. The RIT Libraries has merged with another campus service unit, RIT Teaching & Learning Services. This merger unites the Libraries with RIT’s Online Learning, Educational Technology Center, and Teaching and Learning Center to create a responsive organizational structure that has been re-named and re-branded as The Wallace Center. This merger blends areas of expertise in information technologies, instructional technologies and distance learning and positions The Wallace Center to become a leader in faculty and student support services. The mission of the new Wallace Center includes a renewed focus on faculty and student success and a commitment to build a model that will serve as the intellectual nexus of the Institute.

As the collections, services and organizational structure have evolved over the past 20 years, so has the ability to more robustly serve the needs of distance learners. Distance Learning courses were first offered at RIT in 1979. Initially, only ten courses were offered annually and enrollment totaled 280. By the mid-80’s, course offerings had grown to 22 with 851 enrolled students. Growth has steadily continued and during the 2008/2009 academic year, 637 online courses were offered with nearly 10,000 enrolled students. With an emphasis on a physical building and physical collections, the challenge for distance learning services in the early 1990’s focused on making those physical collections accessible. Like many libraries, RIT did this via their interlibrary loan department which expanded delivery to off-campus learners to include materials owned locally as well as materials requested via interlibrary loan. Both the distance learning student and faculty were provided library support via phone and email contact with reference librarians. There was no differentiation in the mechanism of course delivery or specialized services provided to the distance student.

**Impact of Evolving Technologies**

A snapshot of the library website from the mid 1990s shows the beginning of a transformation that would start to mitigate the difference between library services for on-campus and distance learners. Electronic resources start to appear prominently on the website and while the choice of databases numbers under 10 and collections of e-books and e-journals are still limited to initiatives like the Project Gutenberg Archives and the Scholarly Communications Project accessible via ftp and gopher sites, the prospect of broad electronic access to library materials starts to become a reality. Authentication of distance learners for licensed resources remains a challenge but web-based request forms for services such as interlibrary loan, online instructional materials and the introduction of electronic reserves for course materials improves access to both materials and services for distance learners and libraries can start to envision a future where all library services are available to all users, regardless of their location.
The late 1990s and early 2000s bring even more promise for the delivery of services to distance learners at RIT. A full-time distance learning librarian is added to the staff, reflecting the growth of distance learning programs at RIT. The creation of this new position allowed for more complete service to our remote users; including an ability to pro-actively reach-out to faculty, collaborate with RIT's Office of Online Learning on development projects; create library access user guides; and begin to integrate library services within the progression of learning management systems.

Authentication issues start to be resolved with the development and release of EZproxy by Chris Zagar, an IT professional at Arizona’s Maricopa Community College. EZproxy was introduced in 1999 and removed the roadblock that was preventing access to licensed content for remote users, verification of affiliation and authentication (Zagar, 2007). EZproxy provided a solution to a major problem and the success of the software, particularly for academic libraries, led to the acquisition of EZproxy in 2008 by OCLC (Hadro, 2008). RIT Libraries quickly embraced this solution and continue to use EZproxy for authentication of remote users to all licensed resources, including databases and individual e-books and e-journals.

The first decade of the 2000s can best be described as an explosion, an explosion of resources and new technologies that lead to the creation of a true virtual library. Electronic reserves continue to grow and with the implementation of ILLiad (OCLC) ILL starts to deliver documents electronically directly to users’ accounts. From an initial offering of abstracting and indexing and aggregator databases, electronic collections grow both in numbers and in full text and media content. At the end of the decade, electronic database resources top 200 including full text resources that provide access to over 35000 e-journal titles, far surpassing the number of print titles held at the height of print acquisitions. A similar growth rate is occurring with e-books as more of the book budget is dedicated to e-format, making a concentrated effort to build e-book collections in place of print, both through the licensing of e-book databases such as ebrary and the purchase of individual e-book titles on multiple platforms. The number of e-book titles now exceeds 65,000 and continues to grow as electronic is now the format of choice for almost all subject areas.
This shift from the development of physically held print collections to electronic collections has obvious benefits for distance learners, but an unexpected benefit is that distance learners are no longer a small, unique category of users. The line between distance learners and campus learners has blurred as all users now demand access outside the boundaries of the physical location of the library and of the campus itself. The demand at RIT has also historically been high due to the significant number of co-op students who work off campus each quarter. This emphasis on the “virtual library” and the delivery of content and services any place, any time has meant that significant library staffing and budgetary resources are committed to successful remote access. Remote access is now the central core of today’s library services. Without this change in focus, it is unlikely that RIT Libraries would have had the necessary resources to develop the multi-faceted approach discussed in this article to support a relatively small population of distance learners.

Over the last decade, the growth rate in the acquisitions of material fitting the new model of a “virtual library” has been exponential. Currently, close to 85% of the annual collections budget at RIT Libraries is spent on databases, full text journals and books that can be delivered electronically. Collection development policies have made electronic the format of choice for both journal and book collections for almost all disciplines. Print is purchased when no online equivalent is available or online is cost-prohibitive. A priority is to work with faculty to promote the use of the growing e-book collections as possible textbooks. Since electronic delivery is synonymous with remote delivery, the impact on access for distance learners is clear.

With the growth of electronic collections has come an increase in user expectations for accessibility. Large electronic collections bring unique challenges for collection management; users expect easy to navigate interfaces and instantaneous and reliable access. RIT Libraries has implemented several supporting software applications that have enhanced the ability to meet these user expectations and create seamless interfaces to resources.

The development of standard Z39.88, The OpenURL Framework for Context-Sensitive Services (NISO, 2004) and OpenURL link resolvers represented a technology advance that allowed libraries to maximize their considerable investment in electronic resources by providing users a seamless link to full text resources across databases and other resources. A search in a citation database could now directly link the user to full text available within another database, in a single e-journal subscription, or directly link them to other library services. As with other advances in technology, RIT was an early adopter of the OpenURL protocol, using the ExLibris SFX (ExLibris, SFX, 2009) solution to bring OpenURL linking to users and increase access to growing electronic resources. The power of OpenURL linking was combined with federated searching with the implementation of the ExLibris MetaLib federated search platform, (ExLibris, MetaLib, 2009) allowing students to cross search databases, customize their search experience and link directly to available full text.
The introduction of a new Drupal website in 2008 and implementation of the MetaLib X-Server (ExLibris, MetaLib X-Server, 2009) is allowing RIT Libraries to embed electronic resources directly on the library website, creating an even more seamless environment for users. The MetaLib X-Server software was utilized to dynamically create pages so that electronic resources are kept up to date and the newest resources are immediately accessible to users. Prior to this implementation, the Library’s website consisted of static, html pages that were unwieldy and difficult to maintain. Future development with MetaLib X-Server will directly embed the metasearch and customization capabilities within the website. Users are
notified of enhancements and additions to resources via a Database Blog that is accessible both from the
website and as an RSS feed. As the printed reference collection shrinks, a virtual reference desk with a
wealth of electronic resources is available to provide access to the most frequently sought resources and
questions.

Figure 4. Screenshot of RIT Libraries’ current website showing dynamic web pages leading to databases
and other electronic resources.

Further integration of resources occurs within Desire2Learn, the campus learning management
system (lms), branded as myCourses at RIT. The integration with the learning management software
included the development of a myLibrary button that was added to the main navigation bar of
Desire2Learn. This button leads to a web page that functions as a link server listing course specific reserve
material (both traditional and electronic) and program specific library resources, including librarian contact
information, select databases, librarian created guides, websites and more. The pages are customized based
on the course number and faculty/student status of the user. Since the myLibrary customization is
determined by course number, additional links for using the library from a distance are automatically
provided to those enrolled in online courses. The integration of library resources with the learning
management system and as part of the course design process will grow as the new Wallace Center creates
new opportunities for partnerships between librarians and instructional designers.
Figure 5. Screenshot of “MyLibrary” – a link server within the learning management system integrating customized library resources directly into the course.

Other strategies for expanding access to resources have included the use of applications such as Serials Solutions to manage e-journals and deliver simple interfaces such as A-Z listings to users and the integration of RIT Libraries collections into outside discovery tools such as Google Scholar. Widespread dissemination of resources via multiple technologies expands the reach of the library and creates a seamless interface for users as is illustrated by the “Full Text from RIT” link embedded in Google Scholar.
Figure 6. Screenshot of Google Scholar, illustrating embedded access to RIT’s collections.

Figure 7. Screenshot of Journals@RIT, an A-Z listing created with Serials Solutions.
All of these technologies have allowed for an integration of resources and services that have facilitated learning for distance learners. At RIT, each of the eight colleges has an individual subject specialist librarian dedicated to their faculty and student curriculum needs. The “Meet the Librarian” page on the Library website is a gateway page for faculty and students alike to easily access the subject specialist library liaison for their college. The “Meet the Librarian” page contains the librarian’s photo, contact information, including phone, office location, email, and instant message chat screen. The distance/online librarian also utilizes Skype for easily communicating with remote students. In addition to the provided contact information, this page may also contain a listing of guides created by the librarian, select websites, and other subject relevant information. “Meet the Librarian” pages are easily created and edited by the librarians themselves, another advantage to using the Drupal content management system as the backbone for the RIT Libraries’ website.

In addition to providing electronic and enhancing access to a growing percentage of the RIT Libraries’ collections each year, the RIT Libraries also continually strives to improve the ways in which instruction is delivered to remote users. Methods of delivery have evolved over time through a series of online tutorials and streamed videos. Currently, three to five minute modules on very specific concepts are being developed utilizing Camtasia and Adobe Captivate. Self-paced modules are effective and meet the need in many instances. However, there are still many situations where a live, interactive session is optimal. In those cases, Adobe Connect is most often utilized.

Adobe Connect allows for ease of live instruction by sharing the librarian’s desktop so that a research tour and demonstration can be provided. Interactive chat or voice allows for easy communication along with the instructional demonstration. Sessions can be archived and accessed for later or repeated viewing.

Through RIT’s Department of Research Computing, librarians are also able to utilize the Global Collaboration Grid, known as the Access Grid. The grid is a live, interactive, multi-way video and audio system that will connect all major points on the campus as well as points around the world. This past October, the Access Grid was used to deliver real-time library instruction from the RIT campus to freshman students at the American University in Kosovo, one of RIT’s satellite campuses. The RIT Librarian could see and hear the students in Kosovo and those students could also see and hear the librarian as well as see a live web demo projected in their classroom. Students were able to ask questions based on their research assignments, such as recommended databases, locating full text articles, search strategies, and explore difficulties they had previously encountered in their research with the librarian on hand. This initial live interaction establishes a foundation between the librarian and remote students so that future interactions are more likely to follow in subsequent courses.
Second Life is an online, 3D, user-created virtual world from Linden Labs. Everything within Second Life is created by the inhabitants of Second Life. RIT purchased and began developing an island within Second Life in 2008 to begin exploring and developing its potential as an educational platform. Presently there are many colleges and universities with a presence in Second Life. At this time, the RIT Island has had approximately 32 course sections using Second Life as part of a course, totaling nearly 700 students.

It seemed apparent that the next step for the RIT Libraries was to develop a virtual presence on the RIT Island. Shortly after the island was purchased, a team was formed and plans began to take shape for the RIT Libraries’ virtual presence. The Second Life library did not need to visually replicate the physical building, it needed only to include necessary resources in an easily accessible and visually appealing manner. It was decided to include some recognizable features of the bricks and mortar library, such as the Java Wally’s Café and the salt water aquarium, but primarily the focus was on access to electronic resources and providing contact information via the Meet the Librarian pages. In this endeavor, it was not a case of developing new content but of making existing content available in a new environment.
Challenges

Technology has solved a great many issues in teaching and providing access to remote students. However, challenges of serving distance learners still remain. With individual students located in every corner of the world, there are bound to be language barriers when English is not the first language of the student. Those language differences can become increasingly magnified when trying to diagnose a technical malfunction or miscommunication across distance, too. Technology vocabulary can be a significant factor in determining where the true stop point is in preventing resource access. Inconsistent Internet connections are an issue for students located in some areas of the world. Multiple hardware and software configurations and the use of outdated equipment occur quite frequently. Additionally, cultural and societal differences can sometimes lead to different expectations in support services. Added to these challenges, is the issue of time differences when trying to communicate in real time with students located in different time zones. All of these factors add a new dimension to the original reference interview! Compensating for time differences in time zones to meet virtually via Skype, Adobe Connect or other means, may mean being available at hours outside the normal workday.

Future

With the recent merger of our organization and the formation of our new entity, The Wallace Center, we have the opportunity for further growth and development. Subject specialist librarians are now collaborating with instructional technologists/designers to form college liaison support teams. These support teams are available to assist faculty with teaching strategies, the scholarship of teaching and learning, course development, research instruction and assistance, copyright queries, thesis consultations, in addition to a range of other support services.
The delivery of online content will continue to grow with the expectation that e-book collections will soon match e-journal collections in breadth and scope. New models such as patron driven acquisitions and the integration of acquisitions into the interlibrary loan workflow are expected to be implemented within the next year, linking collections more directly to user needs.

The creation of a new website to reflect the wide range of services of The Wallace Center and further development of the MetaLib X-Server will enhance access to resources, creating an even more seamless interface to resources and services. With these developments will come more complete integration of resources and services into other applications such as the learning management system.

New models of instructional delivery will continue to be explored and implemented, bringing interactive, real-time library instruction to students regardless of their location. As these technologies advance, both video and audio qualities will also improve along with ease of use.

It is not possible to predict exactly where the future will lead, but change is a certainty and clearly initiatives to deliver remote content and services and provide easy access to all users will be at the forefront as the library continues to explore the impact of new technologies and how they may best benefit the end user.
References


While Technology Poses as the Great Equalizer, Distance Still Rules the Experience

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Abstract
Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have been removed from researchers and the research process for a variety of reasons. The problem that was addressed in this study is that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs. The purpose of this study was to gain information about the differences in research behaviors and preferences among doctoral students in distance and residential programs.

“The changing nature of the library may be a touchstone for the changing nature of the university itself”

Introduction and Synopsis of the Literature Review
Recent statistics show a dramatic reduction in the use of libraries and in consultations with librarians for research assistance (Association of Research Libraries, 2008; Kyrillidou & Young, 2006; OCLC, 2002; Zabel, 2005). Concurrently, the research environment has become both more complex yet, paradoxically, easier to use than ever; the labyrinthine Internet offers a wealth of answers to queries with a minimum of effort in a matter of seconds (Brownlee & Ebbers, 2002), while just as quickly producing a “lost” or “overwhelmed” feeling among information seekers. As a result, there is a critical need for the ongoing training and education of researchers (Cook, 2006).

Librarians have historically been responsible for the organization and management of the stores of human knowledge, and for ensuring information literacy among researchers. In recent years, however, librarians have become disintermediated (Boyd-Byrnes & Rosenthal, 2005) or, removed from, researchers and the research process for a variety of reasons. Campbell (2006), former Dean of libraries at the University of Southern California, observed that “today the library is relinquishing its place as the source of inquiry” (p. 16).

The number of students in distance programs has increased tremendously in recent decades (Summey, 2004; Boyd-Byrnes & Rosenthal, 2005). By definition removed from access to the physical university campus and the academic community, this is the group of students with which librarians have the least contact. Distance programs include doctoral level degree programs that demand the most exhaustive and sophisticated level of research. It is imperative that librarians gain a thorough understanding of the research practices and preferences of doctoral students in distance programs.

Purpose and Problem Statement
The problem addressed in this study was that librarians do not have sufficient information about the research practices and preferences of doctoral students enrolled in distance programs.

Doctoral distance students are expected to conduct substantial and exhaustive research; however, librarians have minimal contact with this student population. Covi’s (2000) research showed that doctoral students in residential programs model research practices after the practices of their advisors and mentors.
This may not be possible for distance students as a result of their lack of access to the physical campus resources and community.

Findings from a study conducted by Online Computer Library Center (2002) showed that undergraduate students prefer to consult search engines, specifically Google, for research. Many believe that what is found on the web, via a common search-engine is “good enough” (Bell, 2005; Prabha, Connaway, Olsewski & Jenkins, 2007), employing the approach of “satisficing” their information needs. Simon (1955) coined this term about fifty years ago, combining “satisfy” and “suffice” into “satisfice,” to communicate a “good enough” approach.

The purpose of this study was to investigate the differences in information seeking habits and preferences between doctoral students enrolled in distance programs and those enrolled in residential programs. Specifically, this study aimed to identify to whom or what doctoral student researchers turn for research support, preferred research sources, barriers encountered to consulting with librarians, barriers to using library resources, factors that influence the selection of resources, and how success in searching for scholarly materials is defined.

Participants

To ensure that the students were engaged in similarly demanding research projects, doctoral student who were engaged in, or had recently completed their dissertation literature reviews were selected for the study. This closely matches Babbie’s (2004) description of a “small subset of a larger population” (p.183) that matched the needs of the present study. For this reason, a non-probability sampling strategy was used to identify doctoral students enrolled in a distance program. The individuals included were from one residential and each of two distance doctoral programs within Pepperdine University’s Graduate School of Education and Psychology (GSEP). Specifically, students in the Educational Technology EdD program, the Organizational Change EdD program, and students from one residential doctoral program, the EdD in Organizational Leadership, were asked to participate. This encompassed a total of 20 participants.

Three programs were included in order to establish a comparison between distance student research preferences and residential student research preferences at Pepperdine; Doctoral students were selected for this investigation because they are expected to conduct the most exhaustive and sophisticated level of research projects among all students at the University. Additionally, the research these individuals conduct and the findings they publish have a significant impact on scholarly communication and the academic community. As a result, their research habits are of interest and significance to the academic community and to the advancement of research. Librarians, moreover, need to be thoroughly aware of the differences in distance and residential student research practices and preferences so that these important groups of library patrons can be well served by available and appropriate library research tools.

The Organization Change program concentrates on the broad field of organization change. Students follow a sequence-oriented curriculum through a series of 12, eight-day, seminar-style sessions held at conference facilities in various locations. Once per term, the meetings take place on the Pepperdine campus. The seminars are scheduled at two-to-four month intervals over a three-year period.

The doctoral concentration in Educational Technology, which includes roughly 20 to 25 students per year, has been designed to prepare leaders in the field of technological applications and innovation in the world of education and business. All courses for this program are taken with a cadre, or team, with an annual intake in the fall. Course work is integrated with 60% face-to-face meetings and 40 % online segments, creating a truly distributed learning environment. Face-to-face sessions are scheduled twice each term; once on the Pepperdine campus and once elsewhere in the US or abroad. The majority of communication occurs online through newsgroups, Web pages, and real time "chat" in a virtual environment hosted by SRI and Pepperdine.

Most students in this program reside in the United States, with a distribution that reaches Northeast, Southeast, Midwest, Northwest, and Southwest, including Alaska and the Hawaiian Islands.
Outside the 50 states students reside as remotely as Europe, Asia, and the Caribbean Islands. Additionally, students have attended online class meetings while traveling domestically and abroad.

The EdD program in Organizational Leadership (OL) is designed to develop individuals who have the knowledge and capability to assume leadership roles in a variety of settings. It was created to provide an environment where educators can advance their leadership skills while sharing ideas and experiences with business and academic professionals. The program has applications in educational institutions of all kinds and business environments as well. Classes are conducted face-to-face, and are offered on weeknights and occasional weekends at the West Los Angeles and Irvine Graduate Campuses.

**Research Questions**

The research questions addressed in this study were organized into one main, overarching question, and six sub-research questions. The questions were as follows:

1. What are the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs?

For the distance learning and residential categories separately:

   a. To whom do students turn for assistance with research?
   b. What are the preferred research resources?
   c. What, if any, are the perceived barriers to consulting with the university librarians?
   d. What, if any, are the perceived barriers to using library resources?
   e. What factors influence selection of research resources?
   f. How do students define success in searching for scholarly materials?

This discussion is organized by the research questions.

**Methods**

The researcher conducted a qualitative case study using a grounded theory approach. Babbie (2004) describes grounded theory as an inductive approach to the investigation of social life with the aim of generating a theory. This investigation employed non-probability sampling strategies, convenience and purposive, to identify participants. Henry (1990) defines convenience sampling as a group of individuals who are readily available to participate in a study. Creswell (2003) writes that the idea behind purposive selection is to identify participants that best will help the researcher understand the problem and the research questions. Certain limitations are inherent to the non-probability sampling approach. For example, findings from such a study will not be generalizable to a greater population. However, Henry (1990) and Babbie (2004) both acknowledge that this approach may be appropriate when the researcher is interested in learning about a population with key specific characteristics. Twenty doctoral student participants from Pepperdine University’s Graduate School of Education and Psychology were included in this research. All students were pursuing EdD degrees. Ten were enrolled in a residential doctoral program; ten were distance students. Semi-structured interviews were conducted with twenty doctoral students; ten enrolled in a distance program, and ten enrolled in a residential program. All participants were either actively engaged in gathering material for, or had recently completed, their dissertation literature reviews. In order to arrange equal interview format options for all student-participants, they were allowed to choose whether to be interviewed via phone, via a communications software package called Skype, or utilizing an Internet chat facility called TappedIn. The interviews were conducted over an, approximately, two-month period of time. Each interview took between 30 minutes and an hour. A panel of three experts demonstrating experience in academic, doctoral level research procedures and methodology established interview question and methodology validity. Familiarized with the purpose of the interview questions, panel members were also asked to evaluate content validity of the interview items. Interview transcripts were coded and analyzed using HyperResearch software.
Limitations of the Study

The participants for this study were identified using convenience and purposive non-probability sampling strategies. Pepperdine faculty were asked to provide lists of doctoral students who either were actively working on, or had recently completed their literature reviews. Though this approach was important in order to ensure that participants of the study had recent experience with research, it may have created a less representative sample of doctoral students. As mentioned earlier, certain limitations are inherent to the non-probability sampling approach. For example, findings from such a study will not be generalizable to a greater population. The sample of students, furthermore, was relatively small. With ten distance and ten residential doctoral students, the study may not accurately represent the range of opinions and experiences of doctoral students.

Creswell (2003) writes that the researcher using a qualitative design “reflects on who he or she is in the inquiry and is sensitive to his or her personal biography and how it shapes the study. This introspection and acknowledgement of biases, values and interests (or reflexivity) typifies qualitative research today. The personal self becomes inseparable from the researcher self” (p. 182). Because the researcher is both a doctoral student and librarian at Pepperdine University, she is well acquainted with many of the other doctoral students at Pepperdine. As a result, participants who may have known the researcher may have been motivated to offer biased responses during their interviews. Attempts were made to ensure that interviews were conducted anonymously, so that the researcher did not know whom she was interviewing. As colleagues of the researcher, participants may have been motivated to offer positive remarks about the library, however.

A final limitation of this study relates to the subjectivity of the data, a concern that is endemic to all qualitative studies. Because the data was interpreted by the researcher, student experiences may not be accurately represented.

Major Findings from the Study

Sub-Research Question A: To whom do students turn for assistance with research?

The first major finding relating to Sub-Research Question A reflects the importance of colleagues and librarians in the research process. Doctoral students prefer the help of colleagues and librarians when conducting literature reviews. Eighty-five percent of the participant students interviewed in this study sought out peers and librarians for support and assistance with research in the dissertation process.

Distance students preferred consulting with a librarian more than with any other individuals for research assistance, and were pleased with the guidance received. All 10 of the distance students interviewed for this study expressed the importance of having access to a librarian. Residential students also depend heavily on the librarian’s suggestions. In this study, 70% of residential participants expressed the importance of librarians’ assistance.

Residential students preferred consulting with peers above any other possible advisors when conducting research for their dissertations. All residential students favored working with colleagues, whereas 70% of distance students described the importance of assistance from peers.

It is possible that residential students’ contact and consultation with each other is significantly more convenient than their connection with faculty or other professional advisors. Students residing locally may encounter colleagues on the physical campus and/or they may reside near one another. For distance students, however, colleagues and faculty are usually unavailable for convenient, face-to-face meetings, or otherwise live, synchronous exchanges. Colleagues and faculty, on the other hand, are likely occupied with jobs, family, and/or teaching responsibilities. They may, furthermore, reside in widely differing time zones. Contact with librarians may offer fewer obstacles for these students since librarians are professionally committed to be available for the singular purpose of research assistance throughout the week as well as on
weekends. One distance student, similarly, expressed appreciation for the dedicated nature of librarians’ services, “It's nice to know that there's a librarian there to help out and go find those things.”

Doctoral students ranked faculty a distant third as individuals to consult for research advice. Only half of the participants in this study reported seeking help from faculty, including Pepperdine faculty, the participants’ chairpersons, and/or faculty at other institutions. As with distance students’ dependence on librarians for assistance, they also preferred consulting with faculty in much greater numbers than do residential doctoral students. Distance students were 40% more likely to seek out the assistance of faculty, in the research process than were residential students. Only distance students chose to consult with faculty outside of Pepperdine University.

A minority of students, distance and residential alike, reported they had consulted with mentors. Only 25% of participants mentioned seeking research advice from a mentor or coach. They were equally important, however, to residential and distance students.

**Sub-Research Question B: What are the preferred research resources?**

Distance and residential students alike preferred using library research databases above any other research tool. One hundred percent of residential participants and 90% of distance student participants reported using Pepperdine’s library databases when gathering material for their literature reviews. Most students, furthermore, began their research with the library’s research tools, and the majority claimed that they are easy to use and easy to access as well.

Books were used heavily and equally by distance and residential students. Eighty-five percent of participants in this study described the importance of books in their literature review process. Residential students were more likely to purchase their own books than are distance students. Despite their relative ease of access to campus libraries and collections, 40% more residential students reported purchasing books than did distance students. Electronic books were used by one in four doctoral students, distance, and residential students alike.

Doctoral students are cautious and careful users of resources found on the World Wide Web. Ninety percent of students interviewed for this study communicated an awareness of the academic unreliability of much information found via a Google search. Residential and distance students shared this acknowledgement evenly. Doctoral students retrieve material online with a critical eye. They described a prudent use of specific scholarly websites, such as “Pew Research” named by a distance student or, as a residential student said, “those that end in ‘edu’ or ‘org.’”

Residential students demonstrated a lesser preference for using the physical library than did distance students. Residential students were 75% more likely than distance students to report that they engage in very little use of the library, didn’t use the library at all, or preferred online research than their distance colleagues. There was no difference in the use of Internet resources between the two groups. Interestingly, however, distance students were the only participants who expressed a desire for easier access to the physical library.

**Sub-Research Question C: What, if any, are the perceived barriers to consulting with the university librarians?**

Residential and distance students alike prefer to seek help from librarians and express enthusiastically positive comments about the assistance received. However, distance students are 40% more likely to desire easier contact with the librarian.

**Sub-Research Question D: What, if any, are the perceived barriers to using library resources?**

There is no difference in the ease with which distance and residential students use library databases. However, distance students are seven times more likely to express frustration about their experience with obtaining books or journal articles for their literature reviews.
Distance students uniquely experience feelings of loneliness and isolation during the dissertation process. Sixty percent of distance students interviewed acknowledged the challenges of writing a dissertation while enduring a physical and technical separation from colleagues, faculty and university campus resources. One distance student described, “…even though we were preached to about learning communities and such…the community ended very abruptly.”

Distance students, furthermore, express much less confidence in their research abilities than their residential counterparts. Distance students are four times more likely to experience a “lost” feeling, when conducting research than residential doctoral students. Forty percent of distance student participants commented that they occasionally “don’t know where to go” to get research material. As another distance student said, “sometimes I just don't know where to go.”

Ironically, distance and residential students demonstrate no difference in their knowledge about, or competence with, available library research tools and services. They are equally well informed about the use of databases, methods of obtaining material, and options for requesting help from librarians.

**Sub-Research Question E: What factors influence selection of research resources?**

The answers to this sub-research question have are the same as for the first sub-research question and will not be discussed at length. Students are influenced to choose resources by the individuals to whom they turn to for assistance. As a result, the data used to answer the first research question provides the fundamental answer to this question.

**Sub-Research Question F: How do students define success in searching for scholarly materials?**

The final sub-research question did not produce data useful to the present study. The researcher anticipated that a participant’s definition of, and thoughts about success in searching would be a useful indicator of the variety of factors that influence selection of resources by doctoral students. However, only one student communicated a triumphant experience in finding a specific document. A distance student was in need of the transcript from a seminar held in 1970, “it took me 3 months to find it and to tell you the truth I can't remember how I stumbled upon it but I found it and it was only in microfish [sic] … It was the high of my research - i [sic] NEVER expected to find it but tried on and off nevertheless” (personal communication, March 13, 2008). This student was not deterred from her quest for the document by three months of unsuccessful searches. On the other hand, only one student gave up using research databases because of a lack of success in finding material, “I don't tend to use the large databases, the Ebscohost or Proquest…Those don't seem to work for me, when I put in my criteria … either I can't find anything, which I don't understand - or it takes me off into just a bunch of garbage” (personal communication, February 21, 2008). Beyond these instances, transcripts did not yield data that identified feelings of success or failure influencing a student’s choice of research tools.

**Conclusions and Implications Based on the Literature Review**

**Sub-Research Question A: To whom do students turn for assistance with research?**

The literature reveals staunch support for the statement made by Campbell (2006) that librarians have “lost their supremacy” (p. 16) as the providers of recorded knowledge and historical records. The suggestion that librarians will soon not be needed because academic researchers are increasingly able to access all necessary materials online appears frequently in books and articles. Barrett (2005) and Janowska, Hertel, & Young (2006) report that research on graduate students is small. The present study shows that both distance and residential doctoral student researchers continue to rely heavily on librarians’ assistance in locating literature, choosing and using research tools.

Tenopir’s observation that “there is no typical library user” (2003, p. 28) is also of significance to the present study, and pertains to the results of the research that returned radically different finding than did earlier studies. Tenopir cautioned about drawing conclusions regarding research habits and information
needs of one type of library patron based on data collected about a different user group at a different library. Factors such as user status, discipline, task, type of institution, and age all impact an individual’s decisions when searching for information. The participants in the present study demonstrate an interesting challenge for Tenopir’s observation and recommendation because the students are fundamentally and overwhelmingly similar in many fundamental ways, yet one key factor distinguishes them significantly from each other. They are all doctoral students at Pepperdine University, studying under the same faculty, university mission, and all are at the same point in their doctoral programs. In other words, their status, discipline, task, and type of institution are fairly identical. Though data was not collected about the participants’ ages in the present study, the similarity of the several other features suggests that their ages would not be dissimilar. However, the distance students may reside as far as thousands of miles away from campus and do not have convenient access to the physical resources offered on the university campus. Though Tenopir doesn’t offer a specific category for this characteristic, it might fall under “type of institution” since it is an attribute of the program. As a result, we might expect that the students have many closely matched needs but also some very dissimilar experiences.

In contrast to surveys that show librarians are among the last to be consulted by patrons (DeRosa & OCLC, 2005; Hisle, 2005; Holliday and Li, 2004; and Plosker, 2006), but in strong support of Tenopir’s observations, all distance students and a great majority of residential students interviewed in this study reported consulting with a librarian for assistance with their research. A conclusion that can be drawn from this result, in view of the literature, is that doctoral students conducting exhaustive literature reviews for their dissertations (a “task” similarity) will need assistance from dedicated research specialists, such as librarians, regardless of where the student resides.

A study on library anxiety conducted by Jiao, Onwuegbuzie and Lichtenstein (1996) showed that the distance between a student’s home and the library is a factor that contributes to library anxiety. Similarly, Macaulay and Cavanagh (2000) expressed concern that the loss of live contact with librarians would be problematic for distance students. He predicted that these students would receive less personalized and less obvious assistance. With rapid and dramatic advancements in information technology in subsequent years, and the consequent portability of research tools, Liu and Yang (2004) postulated that the limitations of physical distance had been erased. The results of the present study, however, suggest that research limitations may not have been completely eliminated for distance students. Half of the distance students in the present research expressed a desire for easier avenues of contact with librarians. It is noteworthy that none of the residential students reported such a need. A conclusion based on this result is that physical separation from campus experienced by distance students continues to create special needs and challenges for distance student researchers. Additional concerns uniquely expressed by distance students are discussed later in this chapter.

Though the surveys of library users from the literature discussed above revealed dramatically different results from the present research regarding consulting librarians for assistance, the data from this research was remarkably similar to earlier studies in terms of reliance on friends or classmates for help. Participants in the OCLC study named peers as the top category of individuals consulted. The same results were found by this researcher. Colleagues ranked with librarians as first choice of individuals sought out for help with research overall. Residential students unanimously turned to peers for assistance; the great majority of distance students did so as well. A conclusion, in support of earlier studies, can be made that peers represent an important support network for doctoral students conducting literature reviews.

As with the results relating to librarians, the data showed a 30% difference between residential and distance students’ preference for seeking assistance from colleagues. As suggested earlier, this may be related to the fact that librarians always are available, and expressly employed to help students conduct research. Distance students are separated from colleagues geographically, and also often by time zones, making contact challenging. One distance student supports this statement saying, “…my librarian, actually, is the only person that responds immediately to my requests and has been my biggest source of help.” A conclusion based on these results and student comments can be drawn that distance students’ geographically isolated circumstances make librarians the most conveniently accessible individuals to contact for research advice.
It is perhaps tempting to construe a conclusion supporting results from several studies (Kelley & Orr, 2003; Tenopir, 2003; Tipton, 2002; Yang, 2005) in the literature that indicate convenience as a significant motivating factor in the research behaviors of students. Another study, however, indicates that services dedicated to distance patrons rarely compare to services and resources available to residential constituents (Yang, 2005). As mentioned earlier, another way to express this circumstance experienced by distance students is that barriers exist to certain resources and services, making them inconveniently useful to distance students. A consequent conclusion resulting from the literature review and from this study is that barriers exist for distance students, preventing them from conferring with colleagues as easily as residential students seek advice from their program colleagues.

The literature indicates that students consult with professors or teachers for research help more often than with librarians. Butler (1997), for example, claimed that faculty were students’ main source of information about the library. Participants of the present study reported distinctly different preferences, however. As mentioned earlier, librarians and colleagues were the top choice research advisors of doctoral students. Faculty rated a distant third in the selection sequence; exactly half of the participants reported seeking research advice or information from Pepperdine faculty, their chairpersons, and/or non-Pepperdine faculty. A few students, in fact, vividly described the unhelpfulness of faculty.

Although two of the studies found in the literature showed that a mere 11% and 36% of participants, respectively, sought out their teachers’ help, teachers still outranked librarians (DeRosa, Dempsey, Wilson & OCLC, 2004; DeRosa & OCLC, 2005). In the current study, librarians outscored faculty (teachers) by 50%.

One possible reason for doctoral students’ relative reluctance to seek advice from faculty may be found in Macauley and Cavanagh’s (2000) explanation that students’ faculty advisors frequently assume that graduate students already have mastered appropriate level research skills. As a result, the authors suggest that students are discouraged from seeking out assistance with research from the faculty, and possibly librarians, at the risk of revealing poor or inadequate familiarity with research tools. As discussed earlier, however, the present study shows that students in actuality don’t seem at all hesitant to contact librarians with questions. Only half of the participants, however, chose to consult faculty for help.

None of the participants specifically reported reasons described above for avoiding seeking help from faculty, but certain self-deprecating comments made by participants indicated a belief that their research skills were lacking. One distance student said, “…oh, boy - i don't feel comfortable [sic] suggesting anything in regards to research, as i feel that i am such a novice myself.” A residential student admitted, “sometimes I don't think I'm a very quick learner.” Because, she explained, she “had a heck of a time” figuring out how to use a certain database. This information suggests/inspires the following conclusion: Reluctant to reveal their lack of research skills to respected faculty and advisors, doctoral students prefer to contact colleagues and librarians for research assistance. Further research on the issue of the reluctance to seek help from faculty is implied by these results.

Distance students reveal a much stronger willingness to seek help from faculty than residential students. More than twice as likely to contact their chairperson, other Pepperdine faculty, or faculty outside of Pepperdine, distance students’ tendency to seek advice from faculty ranked equally with their preference for contacting colleagues. The literature does not address the frequency with which distance students contact faculty. There is discussion, however, of their low level of usage of home university services and resources. In contrast to the literature, however, a majority of the distance participants in this study sought advice specifically from Pepperdine faculty and/or their Pepperdine chairperson. This finding further suggests the accuracy of Liu and Yang’s (2004) observation, that technology has erased or at least influenced, limitations of distance that made it more difficult for distance students to contact faculty than it is for residential students.

Covi’s (2000) research is of importance to the issue of students’ reliance on suggestions made by faculty. She found that doctoral students adopted the research behaviors modeled by their chairpersons and senior academic colleagues. The findings in the present research question Covi’s findings. Only a minority of residential student in this study sought assistance from Pepperdine faculty or from their chairpersons.
Though the majority of distance students consulted with faculty, it is not certain that this contact was enough to ensure pedagogic continuity. The differences in discipline-specific research practices may influence this part of the research process, as Tenopir (2003) has suggested. As described earlier in this paper, high-paradigm fields can be described as disciplines with high degrees of ideological and methodological consensus, such as the physical sciences; low paradigm subjects have ideological and methodological dissention, for example, the social sciences (Zaugg, 1990). Few distance programs can be found in the hard, high-paradigm, disciplines. Furthermore, studies of pedagogic continuity are rare in the low-paradigm field of education, as well as in any doctoral distance program. As a result, a conclusion cannot be made, vis-a-vis the literature, about pedagogic continuity among distance students.

A conclusion may be drawn that for distance students, faculty may be as available as colleagues for consultation, but still less easily accessible than librarians. Based on the scant literature available on distance doctoral students’ needs for assistance, this illustrates the importance of further research, particularly in the area of pedagogic continuity for disciplines that offer distance programs.

Interestingly, of the 25% of students who expressed complaints about poor contact with Pepperdine faculty, the three distance students voiced the most severe criticisms. One distance student complained, “I definitely don't feel like I can ask my chair or committee for specific help with sources… they are the leaders in their field and it would be nice if they guided me a bit.” Another said, “getting help from faculty has been awkward or nil.” Finally, the following distance student was forgiving, but described a similar experience, “I knew she was busy so I didn't force anything… it is okay, but it does make the process longer...” Though this group represented a minority among distance student participants, such complaints were not voiced by any of the residential students. In conclusion, distance students reveal more distress about the lack of assistance received from faculty than residential students. Distance students enrolled in doctoral programs could likely face the greatest need for assistance with research. As Jiao et al (1996) implied, library anxiety is heightened as distance to campus increases. Additionally, per Kuhlthau’s (1999) research findings mentioned earlier, these students are likely to experience frustration in their research endeavors. There is further discussion about distance students’ concerns in subsequent sections of this chapter.

Sub-Research Question B: What are the preferred research resources?

“Most student research projects begin with a Google search,” according to Plosker (2006, p. 50). A preference for Internet search engines, most notably Google, among students is widely supported in the literature (Barrett, 2005; Breivik, 2005; DeRosa and OCLC, 2005; Hisle, 2005). As mentioned earlier, however, little of this research included graduate students (Barrett, 2005; Jankowska, Hertel & Young, 2006). Tenopir’s (2003) caution against drawing conclusions on one patron group from data collected on another is of significance to this part of the study as well. Distance and residential students alike expressed a preference for using library research databases over any other research resource; Google was only utilized to a limited extent by students in this study. As described in the major findings section of this chapter, all residential students and 90% of distance students used the Pepperdine library research databases to find material for their literature reviews. Most of these students, furthermore, begin their research from the library website, using the library’s research tools. When compared to the mere 15% of participants in DeRosa and OCLC’s (2005) study who made use of references from a library website, findings in the present study are remarkable. Doctoral students’ unique and extreme needs to conduct exhaustive scholarly literature reviews for their doctoral research lead them to make extensive use of their library’s website and online research databases. It can be concluded, in further support of Tenopir’s (2003) observations that doctoral students’ research behaviors will demonstrate similarities as a result of the resemblances of the students’ circumstances and assigned tasks. Findings imply that substantial and extensive academic resources need to be made available to all doctoral students. Additionally, further research is needed on the unique research needs of doctoral students.

Needless to say, students could not have accessed these databases prior to the advent of the worldwide web when research databases became accessible remotely. In this regard, Liu and Yang’s (2004) suggestion referred to earlier that the limitations of physical distance had been eliminated, is appropriate. The phenomenon of portable research database that enable scholarly research to be conducted from home,
work or even local Starbucks’ cafes has also caused great changes to take place in the research habits of distance students.

Earlier studies of distance student populations revealed a minimal use of the home university library and a strong utilization of resources in community libraries located in the proximity of their homes. In contrast, a minimum of distance student participants in the present study, a mere 30%, made use of local libraries. Additionally, there was no difference between residential and distance students’ patronage of non-Pepperdine libraries. An article by Chakraborty and Tunon (2002) and one published a few years later by Tunon, Barsun, & Ramirez (2004) relate barriers distance students may encounter when trying to make use of local university libraries. Such obstacles did not seem to affect participants in the present study; however, no students reported refusal of service or other negative experiences at non-Pepperdine libraries. It is evident, nevertheless, that home university resources are used more, and local libraries used less frequently by students in the current study. In conclusion, technological advancements have, as Liu and Yang (2004) wrote, erased the differences in usage of the university library website and research databases between doctoral students in residential and distance programs. Additionally, the remote accessibility of library research tools has also eliminated differences between distance and residential students’ use of local or non-home university libraries.

The literature does not reveal data on physical library usage patterns or preferences among residential doctoral students. The curious finding emerging from this study, that residential students are 75% more likely to report that they engage in very little use of the physical library, don’t use the library at all, or prefer online research than their distance colleagues, consequently finds no support prior to the present study. However, Jankowska et al. (2006) observed that graduate students even in residential programs favored electronic journals suggesting some explanation for this preference.

As a result, this finding offers a strong implication for further research in the area of physical library usage by residential doctoral students, so that we may understand the underlying causes for such different experiences between residential and distance students. This finding does offer further support for Tenopir’s (2003) caution that different categories of patrons should be researched separately, even if the differences are few. A speculation could follow that residential students take campus resources for granted and that distance students, conversely, long for such unavailable amenities. Some of the participant comments may suggest this possibility. One distance student said, “I sometimes wish [sic] I could go to a physical library, like Pep and get the book I needed… I think if I had physical access, I would have a more personal connection to other librarians and might ask for more help.” A residential student, felt differently, however, “But I have not, so far, mastered the art of going actually going down to the library and sitting there. And when I say ‘mastered’ the point is: I don’t like going down to the library and sitting down there.” In addition to the lack of literature on the subtle issue of taking resources for granted or, conversely, yearning for resources they cannot have, the present study did not endeavor to second-guess participants’ responses. This delicate topic presents a fascinating area for research, however.

Doctoral students do not start their research with Google, demonstrating a markedly different pattern of Internet usage than participants in earlier studies. Plosker (2006) pointed out that Google most often serves as the starting point for student research according to earlier studies. Among the doctoral students interviewed here, a minority (20%) reported starting research in Google. These students, half of whom were distance and half residential, furthermore revealed familiarity with scholarly material, a cautious assessment of items and information retrieved and/or very limited employment of the Google search engine. One distance student, for example, explained that he used it for “initial info sourcing… the identification of topic info.” Similarly, a residential student specifically used Scholar Google as a first step. The findings of this research, as a result, do not support earlier studies that show the majority students favoring Google as a comprehensive research tool (Breivik, 2005; Hisle, 2005; Barrett, 2005; DeRosa & OCLC, 2005).

Devine & Egger-Sider (2004) write that most researchers are unaware of the limitations of search engines. The literature suggests that confidence with using Google does not necessarily translate to information literacy skills (Seiden, Szymborski & Norelli, 1997; Lancaster, Elzy & Zeter, 1994). As a result, doctoral students’ mistrust of resources found via a Google search suggests that they are more
information-literate than patrons surveyed in prior studies. Furthermore, an implication for further research on the information seeking habits and information literacy of specific groups that, as Tenopir (2003) described, have similar status, discipline, task, type of institution, and age. Earlier research showed that students used (in order of preference) news media, promotions and advertising, online news, IM or online chat, and blogs to find information. The doctoral students in this study used none of these tools.

Sub-Research Question C: What, if any, are the perceived barriers to consulting with the university librarians?

As mentioned earlier, Macaulay & Cavanagh (2000) worried that the loss of live contact with librarians would be disadvantageous for distance students. There was support for this concern in the present findings. Despite the fact that distance students utilized librarians’ help with vigor and accolades, most were troubled by their geographic separation from campus, and found that distance continues to present a barrier to obtaining help from librarians.

One distance student commented, “if I had physical access, I would have a more personal connection to other librarians and might ask for more help.” In response to the question, “what about barriers to getting help from the librarians at pep?” another distance student’s perfunctory reply was, “distance.” Another comments, “so I tend to do that, I tend to rely a lot on you know the human contact. And oftentimes it’s so hard to get people through email …I sometimes have been successful and sometimes I haven’t gotten a response.” A fourth distance student admitted, “I wish I had - and maybe it exists but I don't know of it - a way to more easily get in touch with a librarian …. I felt that I was working always through a computer or computer database or I was on my own.”

A small minority of residential students complained about barriers to accessing librarians, and most of those criticisms were to some degree made in jest. One student mused, “I think there are times that you have a question and you think ‘oh I am not at the library so can’t ask anybody’ when in reality you could go and email somebody or you could pick up the phone.” With a chuckle, another student said, “They weren't there on Sundays very much.” In conclusion, distance still seems to present a barrier to accessing help from librarians and a serious concern for distance students, despite the proclamation made by Liu and Yang (2004) that the limitations of physical distance had been erased for distance students. Residential students are not worried about barriers to services like distance students are.

It is important to consider that studies have long shown distance students to be largely unaware of library services available to them (Butler, 1997; Kascus & Aguilar, 1988; Azubuike & Greaves, 1989; Washington-Hoagland & Clougherty, 2002; Fang 2006; Casey, Sohrin & Race, 2002; Kelley & Orr, 2003). The current research showed that this continues to be true. This lack of awareness of services and tools, however, is unlikely the cause for distance students’ anxiety, however, because this is equally true of residential students. Based on the findings of this study, and in view of conclusions in the literature, geographic distance, in and of itself causes distress among distance students working on literature reviews. Research conducted more than a decade ago by Jiao et al (1996) revealed that the distance between a student’s home and the library is a factor that contributes to library anxiety. The present finding supported this conclusion as the most emphatic concerns were voiced by distance students who lived more than 1000 miles from Pepperdine campus.

Studies conducted until the year 2000 indicated that distance students favor local libraries over their home university’s library’s services (Kascus and Aguilar, 1988; Stasch, 1994; Shouse, 1995; Cassner & Adams, 2004; Unwin, Stephens & Bolton, 1998; Dew, 2000; and Tipton, 2002). More recently, however, Tunon, Barsun & Ramirez (2004) described how libraries were having difficulties accommodating the needs of non-constituents, suggesting that barriers might arise for distance student wishing to use local libraries. The present study revealed different preferences among distance students both in the use of physical libraries and virtual library resources. Without acknowledging barriers in the use of local libraries, doctoral students overwhelmingly favored the use of home university library resources. A minority of distance students used local libraries. Furthermore, there was no difference in the rate of non-Pepperdine library usage between residential and distance students, as mentioned earlier.
Sub-Research Question D: *What, if any, are the perceived barriers to using library resources?*

The literature reveals 20 years of studies acknowledging that library databases are difficult for patrons to use (Breeding, 2007; Prabha, Connaway, Ozlowski & Jenkins, 2007; Holiday & Li, 2004; Novotny, 2004; Borgman, 1986, 1996; OCLC, 2002). More recently, such studies have highlighted the difference in ease of use between library research databases and Google. Findings in the present study did not support the literature on this point. Though a minority of students in the current research did agree with participants in prior studies, most doctoral students found the databases easy to use and to access. Once again, Tenopir’s (2003) observation that different categories of students exhibit different research behaviors finds support in this study.

When frustrated with the scholarly databases, the literature shows, students turn to the web (Holliday and Li, 2004; DeRosa & OCLC, 2005; Hisle, 2005; Plosker, 2006; Abate, 1998). A small minority of participants, 20%, in the current study illustrated this behavior. Doctoral student participants demonstrated a cautious and prudent use of Google as a research tool. The highly selective approach to the use of research tools demonstrated by participant doctoral students may find support in Borgman’s (2007) observation that “Readers who are scholarly peers and have extensive access to the literature of their fields may make fine distinctions between publication channels in assessing the quality of a document” (p. 84). Both distance and residential doctoral students at Pepperdine have convenient and continuous access to well over 160 library research databases. Once again, doctoral students in the present research showed different information seeking patterns than participants in earlier studies, strongly indicating the importance of further studies focused on their specialized needs.

Distance students experienced much greater frustration when attempting to obtain research material than residential students did. The Association of College and Research Libraries’ guidelines state that, “access to appropriate library services and resources is essential for the attainment of superior academic skills in post-secondary education, regardless of where students, faculty, staff, and programs are located. Members of the distance learning community, including those with disabilities, must therefore be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to those provided for students and faculty in traditional campus settings” (Association of College and Research Libraries, 2010, para. 20). The literature reveals, unfortunately, that libraries serving distance student populations rarely meet these guidelines. Research shows that this likely is a result of a lack of funding for and attention to such services, a common circumstance in libraries (Kelley & Orr, 2003; Yang, 2005). It is not surprising, consequently, that the present study revealed distress among the majority of distance students concerning the difficulty in obtaining books and articles. Students largely blamed isolation and geographic distance as the cause of such disadvantages. On this point, consequently, electronic research tools have not erased the challenges of geographic distance and/or isolation as suggested by Liu and Yang (2004). In conclusion, distance students continue to encounter barriers not experienced by residential students in obtaining research materials. Implications for practice include ensuring that services for distance students are comparable to those available to residential students, and, are available to them wherever they are located. Furthermore, research needs to continue to investigate discrepancies in available services, with a focus on specific types of students, as recommended by Tenopir (2003).

Distance students revealed much less confidence in their research skills than residential students. Though students did not expressly identify this as a barrier to obtaining research materials, this characteristic quickly translates into an obstacle to progress. As mentioned earlier, the literature reveals that undergraduates and high school students are self-assured technology users who demonstrate faith in their online searching skills. Little research can be found on the level of technology or research-skills confidence among doctoral students. However, a number of studies describe the persistent lack of awareness of library resources among distance students (Butler, 1997; Kascus & Aguilar, 1988; Azubuike & Greaves, 1989; Washington-Hoagland & Clougherty, 2002; Fang 2006; Casey, Sochrin & Race, 2002; Kelley & Orr, 2003). This shortcoming could easily produce anxiety with using research tools. The present study did not find support for the literature in the difference between residential and distance students in their familiarity with research tools, however. There is evidence in the literature, as described above, that anxiety increases...
among students along with their geographic separation from campus (Jiao et al, 1996). The present findings support this tendency, as described earlier.

Sub-Research Question E: What factors influence selection of research resources?

The answers to this research question are embedded in the responses throughout the five research questions. The reasons for students’ choices of resources were reflected in the selections they made, and in their explanations of the importance of the respective tools they chose to use. The same can be said for students’ choices of individuals they turn to for assistance.

The literature describes convenience as the single overarching motivating factor in students’ choices of resources and materials when looking for information. The findings from the present study revealed that doctoral students’ behaviors were guided by more complex principles, however, and do not support the literature. A dissertation, by its very nature, demands great energy and commitment to task over a long period of time. The difficulty in completing a dissertation is reflected in the many websites that offer to assist the ABD-status students, in the one of many phrases well-known among doctoral candidates, “a good dissertation is a done dissertation,” and in the literature. Bookstores abound with tomes that offer help to students in the ABD-category; help that promises to take them across the finish line. Leatherman (2000) writes in the Chronicle of Higher Education “Technically, ABD stands for ‘all but dissertation.’ But for anyone who has languished in that purgatory, it might as well stand for ‘all but dead’ (A18).” As a result, the word convenience may not appropriately characterize any element of the doctoral experience.

Doctoral students’ need for scholarly material guided their choices of resources and was their primary motivator in how and where to look for resources. As described earlier, doctoral candidates were cautious and careful users of resources found on the World Wide Web. Doctoral students started their research on the library website, rarely in Google, as a result of their need for academic-quality material. Only one student participant, a distance student, expressed a preference for material that could be obtained quickly. This student said, “I don't like to wait, usually I will opt for something else that I can get immediately online.” However, this same student also wished that she could go to a physical library and get books, indicated that new students should be advised to search for journals that are peer reviewed, learn to use Endnote despite the fact that “it is frustrating at first,” and “read several dissertations”. These comments contradict this student’s claimed preference for quick delivery of materials, and instead revealed commitment to scholarly quality research practices.

Sub-Research Question F: How do students define success in searching for scholarly materials?

Doctoral students’ feelings of success or failure in looking for research material were not useful indicators of the research tools they chose to use when conducting literature reviews. Some students expressed a lack of confidence in their research skills, and one student participant expressed great satisfaction over finding one particular document. With the exception of just two students who gave turned to the Web after having trouble finding material in the research databases, these experiences did not appear to impact the majority of students’ selections of research tools, however.

Studies in information seeking behavior that have focused on the emotional experience of the searcher have shown that feelings of uncertainty and confusion consistently are present in the process (Kuhlthau 1999; Wilson, Ford, Ellis, Foster & Spink, 2002). Kuhlthau (1999) found that the expert searchers demonstrated less tolerance for uncertainty than novices. This might suggest that doctoral students, the most experienced among student researchers, likely would experience aggravation during the literature review. Tough transcripts from this study reveal that students did encounter frustrations while researching their literature reviews, this experience did not influence their selections of research tools. In conclusion, feelings of success or failure in the research process did not affect doctoral students’ selection of research tools during the literature review process. Further research on the specific information seeking behaviors of doctoral students is implied as a result of the findings from the present study.
Grounded Theory Conclusion

Glaser & Strauss (1967) write that a grounded theory must fit the area concerned, must be readily understandable, must be general enough for application to multiple situations, and must afford the user control over daily and changing situations (p. 237). This study has revealed that distance students’ experiences and behaviors during the dissertation literature review process differ from those of residential students. In spite of the multiple advancements in technology that allow for easy electronic communication and access to research resources, the educational experiences of distance students continue to be unique. The following theory, born out of the various observations from the present study, embodies the four characteristics outlined by Glaser & Strauss (1967). The students’ separation from the university campus and physical resources, including faculty, librarians and colleagues, results in certain predictable reactions and experiences.

Summary of the differences in information seeking behavior and research resources used between doctoral students enrolled in a distance learning program and doctoral students enrolled in residential educational programs.

The overarching research question for this study sought to determine if the differences in research behaviors and preferences between distance and residential doctoral students. A list gleaned from the findings, and influenced by the literature review, follows:

- Distance students preferred to contact librarians for research assistance.
- Distance students were less likely to contact colleagues for assistance than residential students.
- Distance students were more likely to seek out assistance from faculty than residential students.
- Distance students were less likely to purchase books for their literature reviews than residential students.
- Distance students expressed a stronger preference for using the physical library.
- Distance students were more likely to desire easier contact with the librarian than residential students.
- Distance students expressed much less confidence in their research skills than residential students.
- Distance students were more likely to seek research assistance from faculty, and revealed more distress about the lack of assistance received from faculty than residential students.
- Distance students uniquely experienced feelings of loneliness and isolation during the dissertation process.
Table 1

Examination of the Particular Characteristics of Distance Students

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<td>Uniquely, distance students experience feelings of loneliness and isolation during the dissertation process.</td>
<td>This theme is central to implications raised by the present study. Though advancements in communications technology have revolutionized students’ abilities to collaborate and be connected with each other, with faculty and other campus personnel, the psychological impact of physical distance continues to generate feelings of isolation among distance students. Post-coursework, there are no more regular online class meetings, collegial collaborations or scholarly discussion-list activities to reinforce their doctoral identity. Instead, distance doctoral students become reabsorbed into their respective home and work environments, and caught up in family dynamics as well as job responsibilities. The doctoral persona and pursuit become more elusive for distance students working on their dissertations far removed from the traditional scholarly environment. These perceptions consequently influence students’ observations about their education experience and impact behavior in the various ways listed throughout this table. It is evident that technology has affected, and in some ways even eliminated, differences in access to resources between groups of students described in the literature. Inequalities remain, however and continue to create challenges for current distance students. Electronic access has not replaced the campus experience. Glaser and Strauss write that a “substantive grounded theory that corresponds closely to the realities of an area will make sense and be understandable to the people working in the substantive area”</td>
<td>Liu and Yang (2004) suggest that the evolution of information technology has erased the limitations of physical distance, and recommend that student research habits should be revisited. Though access to electronic library research resources is by and large unfettered, and many local students choose to conduct all their research from home, geographic separation still has a noticeable impact on the distance student’s research experience. A distance student explained, “…I felt that I was working always through a computer or computer database or I was on my own.”. It’s a lonely process. One distance student said, “I guess I will add that distance learning is fabulous, but lonely, until one learns to navigate the systems for research. … As someone who has considered giving up, yet is still in the game...” Another student expressed great frustration with the lack of connection and support during the dissertation phase, “…we were Drop kicked to the curb …even though we were preached to about learning communities and such…the community ended very abruptly [after the coursework phase].”</td>
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<td>Distance students express a stronger preference for using the physical library.</td>
<td>Distance students do not have the luxury of taking physical resources for granted, and long for amenities unavailable to them. Whereas residential students eschew unnecessary trips to campus, doctoral students working on their literature reviews at a substantial distance from campus yearn for the trappings of academia that signal scholarship.</td>
<td>Maccacley and Cavanagh (2000) write that the, “loss of live personal contact is disadvantageous” for distance students. “One distance student commented, “I sometimes which [sic] I could go to a physical library, like Pep and get the book I needed...“ Another lamented, “if I were on campus I could go to the library directly, but living away means that I pay a LOT of money to get the resources I need...” I think if I had physical access, I would have a more personal connection to other librarians and might ask for more help</td>
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<td>Distance students prefer to contact librarians for research assistance. They are more likely to desire easier contact with the librarian than residential students.</td>
<td>Librarians represent a dedicated research professional at students’ continuous disposal. When compared to student-colleagues and faculty, librarians by definition offer more predictable availability. As described for the previously listed theme, distance students yearn to feel more closely connected to the university in order to bolster their self-perception as doctoral students. Predictably, then, despite the fact that librarians are available via phone, email and chat, distance students want more availability, more access.</td>
<td>One distance student commented, “my librarian is the only one who responds to my questions.” Another student said, “Now, so, a remote program like we have you're not really close to the university I wish I had a, and maybe it exists but I don't know of it, a way to more easily get in touch with a librarian or somebody that could virtually help me.” Illustrating problematic communications with faculty, one distance student described how she avoided “bothering” her chairperson, knowing he or she was busy. Another student concurred, “getting help from faculty has been awkward or nil.”</td>
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<td>Distance students are less likely to contact colleagues for assistance than residential students.</td>
<td>Distance, in and of itself, continues to inhibit student to student contact. Despite the availability of chat technology, IM, cell phones, texting and, of course, email, the reality of being far away creates a sense of separation that even convenient electronic communication tools have not managed to erase. Additionally, student-colleagues may be less appealing as sources of assistance. Colleagues may reside in widely differing time zones, they may be distracted by and consumed with family and work responsibilities, they may have completed their dissertations and have moved on beyond the school “phase” of their lives, they may also be struggling with their dissertations and not seem to be able to provide meaningful, helpful, or accurate advice.</td>
<td>In response to, “Do you also feel that the &quot;live access&quot; to colleagues/peers would be helpful if you were closer to campus?” one participant replied, “I do, they might see me and not totally forget about me.” Another distance student likewise explained, “I felt no one would be able to help…my colleagues were working on different topics.” Another participant was asked, “What about your colleagues in your program - did you collaborate with folks to get through the process? To find material and get what you needed?” …Student response, “I did somewhat, but, you know - not a lot. It's a pretty lonely process; pretty isolated”.</td>
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<td>Distance students are more likely to seek out assistance from faculty than residential students.</td>
<td>Distance students contact faculty more often than residential students for two reasons. Students on campus can visit faculty members and chairpersons in their offices; students may even bump into faculty/or committee members other in the library or a hallway. Whether or not the faculty schedules allow for convenient office visits is irrelevant; technically the fact is true. For distance students, contact with faculty has a different look and feel, however, and falls into another paradigm. Their contact options and avenues are all passive formats; they can leave a message via email, texting or by telephone. As a result, distance students do not take contact and communication with faculty for granted and tend to make greater efforts to stay in touch. Additionally, faculty members symbolize the classroom environment and experience. It is not surprising that contact with faculty can provide scholarly reassurance to distance students. Finally, as pointed out above, student-colleagues may be less appealing as sources of assistance.</td>
<td>“I’ll be back looking for some sources and my chair has sent me some references.” Another distance student, who also made some of the negative comments above, a ck positive remark, “my chair will also recommend an author - that really helps me to know which ones are respected.” My advisor in the lit search was helpful in terms of suggestions as to ways to look, and I have found a fair amount of professors who are fairly deep in narrower subjects to be very helpful, uhm, and my Pepperdine professors in particular And it doesn't take them long, I mean, my guess is it just comes right off the top of their head or they may have to pick up a book and look for two minutes, but not much and they can be very very helpful so that is tremendous.</td>
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<td>Distance students express much less confidence in their research</td>
<td>Without the reassuring and empowering influence of a campus environment and resources, distance students readily assume that their research skills, likewise, must be lacking. In reality, distance students more frequently contact librarians than do residential students, and as a result may be better informed about research tools available to them. Furthermore, this study showed that distance and residential students are equally familiar with library resources. Nevertheless, many distance student participants clearly doubted their expertise. Distance students’ lack of confidence in this regard further challenges their ability to view themselves as scholars.</td>
<td>I’ve never felt more stupid or more incompetent at any time in my life both personally and professionally.” i really had no idea what i was doing, and got through it but don't have confidence…” I've cited quite a few periodicals in my dissertation which my chair’s not thrilled about but sometimes I just don't know where to go.” “I’m not finding a ton on my ebsco search. It’s a little frustrating and I’m wondering if it’s me or the database</td>
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<td>skills than residential students.</td>
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<td>Distance students are less likely to purchase books for their</td>
<td>Comments reveal that distance students find book purchases time consuming, inconvenient and costly. Such observations were not reported by any residential student participants despite the likelihood that they would experience similar costs and delivery lag times. There are possibly more subtle reasons for these students’ reluctance in purchasing books for their projects. The combination of experiences that challenge their sense of self as scholars may easily interfere with their desire to build personal academic libraries. In other words, if distance students believe they are inadequate researchers and not genuine scholars, they will not be motivated to invest in possibly obscure academic monographs.</td>
<td>One distance student explained, “I would say I sometimes lean toward a journal article instead of a book because it will be painful and expensive to get it. Another indicated that purchasing books was a burden for her. She explained, “I run into obstacles when I want to find a book section, and then I have to go and buy the book - wait for it to arrive in [a state 3000 miles away] or pay about $30 for it to be sent quickly - this is a huge time suck for me, the waiting for a book section to arrive.” Another distance constituent reported using electronic books exclusively. Finally, one distance student expressed frustration, “i feel that i wasted over a year heading in wrong directions…and a lot of $$$ buying books i never needed :-) … i think that is one reason my diss has taken me so long – “ In contrast, a residential student commented, “I buy books. I love books and I tend to buy them.”</td>
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Appendix

Interview Questions

Interview questions
1. What happened the last time you began looking for scholarly material for a school project or research paper.

2. So the first step you took to find the information was?
   2.a. Did you feel overall that you were successful?
   2.b. Did you retrieve enough material?
   2.c. How did you know it was enough material? Define enough?
   2.d. Did you retrieve the material efficiently enough?
   2.e. Were the methods you used to retrieve the information efficient?
   2.f. What were some of these methods?
   2.g. Were the methods you used for retrieving the information quick and error free?

3. Did you use other sources – of any kind for this project?
   3.a. How did you find out about this resource?
   3.b. What kind of sources were used?

4. Have you used this resource before?
   4.a. With the same success?

5. Did you feel frustrated at any point in the research process?
   5.a. What did you do? (try another source? ask anyone for help?)

6. Describe any issues that stopped you from using the library databases.
   6.a. How user-friendly was the library web-page?
   6.b. What types of problems did you encounter?

7. What stopped you from contacting a librarian when you were having difficulty on the library web site?

8. Did you find it difficult to get an answer from a librarian and if so why?
   8.a. What helped you to decide how to proceed after encountering difficulties?

9. Have your colleagues in the program asked you for help with research?
   9.a. What did you advise them to do?

10. Who has been the most helpful to you in finding scholarly material for school projects?
   10.a. Have you consulted with anyone else? If so, why?

11. Did you feel you would have liked to have help in finding scholarly material?
   11.a. Would you have been interested in finding help in doing your research?
   11.b. Who do you think you might have received this help from?

12. If you were to give advice to a new student in your program about conducting research, what would you say?

13. If you were to explain to a colleague what defines scholarly material, how would you do so? What would you say?
14. If you were to need help finding scholarly material for a school project, whom would you ask for advice?

15. What does the phrase “library databases” mean to you?
15.a. If there are library databases that you like to use, please name them.
15.b. What do you like about these databases?

16. How comfortable are you with using…
   a. Microsoft Word 
   b. Internet search engines (e.g. Google or Yahoo)
   c. Library databases (e.g., Research Library, ERIC or Business Source Premier)
   d. Free time technology (i.e. MySpace, blogs, chat)

(N) Novice – Need to follow a direction sheet
(CF) Computer friendly – Can use without instruction but could not teach,
(E) Expert – Could teach to colleagues
Untapped Potential: Seeking Library Donors among Alumni of Distance Learning Programs

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Abstract
In recent years, decreases in higher education budgets have forced academic libraries to rely more heavily on philanthropy in order to operate or expand collections. Alumni are the most obvious potential donors to an academic library. Many alumni recognize the library as part of their higher education experience and are happy to give to the library. For many institutions with distance learning programs, a growing number of alumni have never been to campus or have rarely visited but they may use and appreciate library services. However, few academic libraries have attempted to tap this source of potential donors. This paper examines the possibilities of soliciting donations from graduates of distance learning programs who were users of library resources.

Introduction
For a number of reasons, libraries in general and academic libraries in particular are no longer funded at the same levels as they have been in the past. Limited revenue means choices must be made by higher education administrators about funding for academic and support units including campus libraries. Because of this, academic libraries are increasingly seeking private funding. This financial augmentation has been either out of necessity or by mandate. Costs for libraries have increased at the same time funding for them has decreased. Dewey (2006) noted that library periodical acquisition budgets are having difficulty with 8% to 12% annual inflation increases. In addition, the shift to electronic collections results in increasing costs to acquire existing digital resources or for a library to create their own. Many libraries cannot afford access to both print and electronic versions of journals. The high costs of scanning and uploading existing collections to the Web also strain library budgets. However, there is money to be had. According to Summers (2006), "By several measures, well over $100-trillion will exchange hands in the next decades as baby-boomer wealth passes to the next generation" (p. 22). Thus, academic libraries are now seeking supplementary new sources of revenue from private donors just as one of the largest transfers of wealth is about to occur between generations. The recent recession may have cut into the size of wealth to be transferred, but it is still huge. In recent years, academic libraries have become active players in the fund-raising game in order to supplement decreasing funding from their parent institutions (Hoffman, Smith, & DiBona, 2000). Despite this level of activity, there appears to be little effort being made to solicit funds from alumni of distance learning programs.

According to the National Center for Education Statistics (2008), 66% of two- and four-year degree-granting institutions in the United States offered some type of distance learning courses in the 2006-2007 academic year. Students who enroll in distance learning courses tend to be more mature than the average undergraduate or graduate, need flexible programming to accommodate lives that often include families and jobs, are usually returning to school to complete a degree or retool their careers, and tend to be self-directed (Birnbaum, 2001). Further, they seem to be “less concerned about titles and more concerned about what the instructor knows and wants to share with them” (p. 17). The majority of adults who reported using any type of distance education method in the 2004-2005 academic year were aged between 25 and 54, female, white, had some college education, and worked full time (National Center for Education Statistics, 2006).
In addition, assessment conducted among distance learning students of their library experiences, such as at Athabasca University (Schafer, 1998), is generally quite positive. Since libraries tend to reach out and deliver materials and services to distance learning students, responses such as this in a 2007-2008 survey, “[This] program really makes the extended campus population feel welcomed and part of Eastern Michigan University” (Block, 2008, Findings section, question 9), are fairly common.

Recent graduates of such programs may prove to be a group worth pursuing for library fund raising. As older, working adults, they often possess sufficient income upon graduation to enable them to donate. In addition, if they had a positive relationship with library support services and collections, they may be inclined to view donating to the library in a positive light. Unlike traditional students, those who graduate from distance learning programs may be financially and emotionally prepared to donate upon graduation rather than after a period of years which the younger graduate often needs to become financially ready to give back to the institution.

**History of Library Fund Raising**

The scholarship pertaining to library development efforts is not large (Wedgeworth, 2000). This lack is surprising since much of the public and academic library systems originated from philanthropic efforts and fundraising activities are increasing. What literature exists tends to be quite narrow. Latour (2003) reported that the literature is, "becoming more common, but it continues to be characterized by narrowly defined descriptions of techniques used at specific libraries" (p. 18).

Despite the largely American origin of academic library development work, the first recorded instance of library philanthropy goes back to Roman history. Early giving can be traced to 39 B.C. In that year, Gaius Asinius Pollio built the first known public library in history by the Forum in Rome. The bequest was entirely funded by Pollio's defeat and plunder of the Parthini in Illyria (Bobinski, 1994). Examples of gifts to college libraries can be seen as early as 15th century England. Evidence shows that Oxford University had an active development program that aimed to solicit books for the library. Oxford University considered books “the most prized of earthly goods” (McMahon, 1949, p. 424).

Most library funding in the early days of the United States was private (Kemmis, 1998). An example of this is John Harvard's establishment of the Harvard College library in 1628 when he left his entire collection of 400 books dealing with theology, general literature, and classics to New College in Cambridge, Massachusetts. The institution was then renamed Harvard College in his honor (Morison, 1932). As such, the name of perhaps the most prestigious university in the United States is a direct result of an act of academic library philanthropy.

Yale University is also named for a book donor based on the 1718 gift of 300 books by Elihu Yale (Bobinski, 1994). In addition, Thomas Jefferson sold a book donation which reseeded the Library of Congress after British troops destroyed it when they burned Washington, D.C. during the War of 1812 (Malone, 1932). Jefferson also made sure that the University of Virginia, which he helped to establish, had a proper library (Martin, 2002).

After the initial libraries at these early academic institutions were established, the majority of their collections grew as a result of direct or indirect gifts of books well into the 19th century (Shores, 1934). Shores noted, “Benefactions themselves were more frequently the result of ingenious devices and appeals on the part of the college or its agent, and occasionally resulted in funds for the purchase of books” (p. 102). Shores also noted, “Without the interest and aid of private benefactors the colonial college library would have been poor indeed” (p. 109). From these inauspicious beginnings, academic libraries continued to develop into their modern day formations. Development efforts for library support increasingly become more sophisticated over time.

Perhaps the most well known library philanthropist was Andrew Carnegie who gave massive sums of money to libraries in the late 19th and early 20th centuries. Carnegie's donations helped create thousands of public libraries which were the base of the modern American public library system. Carnegie gave money to build 2,509 libraries throughout the English speaking world including the British Isles,
Australia, and New Zealand. Of these libraries, 1,679 of them were built in the United States and in American possessions (Lorenzen, 1999). He spent over $55 million on libraries alone and he is often referred to as the "Patron Saint of Libraries" (Bobinski, 1969, p. 39). Although most of the Carnegie libraries were public, many academic libraries were built as well (Jones, 1997). A total of 108 academic library buildings were constructed from Carnegie funding (Bobinski, 1978). Carnegie’s giving helped to serve as an example as well to higher education on how to make use of a wealthy benefactor to find significant funding.

Harvard University again played an important role in academic library development history in the early 20th century. Harry Elkins Widener died at the age of 27 when the Titanic sunk in 1912. His mother gave $2 million and her son's personal collection of 3500 rare books in his memory to Harvard University after a request by Harvard librarians. The Harvard University library was renamed the Widener Library in Harry Elkins Widener's honor (Lynch & Marschall, 1992). As the Widener Library is a major worldwide research library, this is a noteworthy story of successful academic library development work and donor philanthropy. Although this is not the first instance of a library successfully asking for a large donation, it is one of the first that received a great deal of publicity and attention thus it influenced other academic libraries to make similar attempts.

It was not only large academic libraries that participated in large scale fund raising work. Carleton College, a small private school in Minnesota, had an active library fund raising program as far back as the early 1950s. In 1952, a development campaign was held for the library after a donor offered $1.3 million for a new library. As a condition of the gift, the college had to raise $1.5 million more to build a new library within two years (Paustenbaugh, 1999).

Despite the long history of fund raising in academic libraries, Kemmis (1998) noted that funding for most publicly funded libraries shifted from private to public funding and the need for development work decreased. This shift in practice took place in the mid-20th century, reversing historic funding trends for libraries. Hood (1991) referred to the 1950s and 1960s as the "golden age of higher education" in the United States. Academic libraries in public universities and colleges were well funded by their parent institutions which were receiving generous public funding. There was little need for libraries to engage in development work. Fund raising was a minor part of the job for library directors if they engaged in it at all and development officers did not exist for the in libraries.

Powell (1967) conducted a survey of 22 academic libraries in 1956/1957. He found that cash gifts and other endowments represented 18.5% of the total library budget at private institutions but was only 2.5% of the library budget in public institutions. During this time of excellent funding for academic libraries, librarians focused their efforts on collection development by soliciting gifts of books and other materials from private collectors rather than seeking external funds (Magrill & East, 1978). The downturn in public funding mostly impacted public institutions that were tax payer supported. Private institutions receiving federal grants were also impacted but not nearly as much.

Only in the last three decades have economic changes forced libraries to rediscover the need to find private funding. As this change occurred, authors quickly noted the lack of a sound literature. Eaton (1971) complained that, "fund raising has been a relatively neglected aspect of university librarianship" (p. 351). Steele and Elder (2000) looking back at the sparse literature on the topic wrote, "the literature has been unfocused, undeveloped in its thinking, and approaches, and sometimes just plain wrong" (p. 9). Veaner (1990) noted, "The view of the library as a special preserve, protected from the rough-and-tumble of the business world, is fast disappearing" (p. 442). Administrators in academic libraries have become motivated to raise funds on their own from private benefactors as future funding for their libraries is not assured.

To a large extent, those who were writing about fund raising were responding to the establishment of many academic libraries of major development efforts in the 70s and 80s. In 1977, the University Libraries of the University of Pittsburgh received $100,000 dollars from the 1977 Sugar Bowl. Also in 1977, Edmund and Louise Uraff Kahn gave both the University of Pennsylvania Libraries and the Smith College Library $1 million dollars. In 1982, the Xerox Corporation gave $3 million dollars worth of
Kurzweil Reading Machines to 200 academic libraries (Bobinski, 1994). These early efforts in development were unfocused and conducted by library directors versus a designated library development officer. Nonetheless, these forms of donations began to establish the foundation for current practices in development.

Lynden (1980) listed six development concepts that many academic libraries were beginning to use in the 1970s. These included appointing staff to seek external funds, including the library in the institutional capital campaigns, shifting from federal fund sources to local and alumni support, increasing public relations efforts, creating friends of the library newsletters, and creating fund raising literature. Martin (2002) reflected on this listing, "It should be observed that these techniques were being described as novel and unusual means of addressing budgetary problems only 21 years ago" (p. 3). The emergence of library development efforts provides areas that require more research to better understand how the initial stages of development outlined by Lynden have matured and to determine what strategies are most effective. However, Martin has also shown that this emergence has been hampered by the slow development of these fund raising techniques and their relative newness.

In the early 1990s, research discovered that libraries at doctoral-granting institutions were more likely than the libraries of smaller institutions to get money from federal or state grants, foundations, and donor gifts (Lynch, 1991). From 1987 to 1990, more than half of doctoral-granting institutions engaged in library fund raising while academic libraries from other Carnegie classifications were much less involved (Beaubien & Lynch, 1991).

The literature relating to academic library development began to increase significantly in the 1990s and it continued to grow some more into the 21st century (Martin, 2002). This recent increase in literature has helped to better understand fund raising for academic libraries, but it is still sparse in comparison to most other areas of library management. However, the focus of most of these publications centers on problems and strategies at specific institutions rather than focusing on library development theory (Steele & Elder, 2000). Significant and relevant articles included one that linked fund raising in academic libraries to the broader field of public relations (Wedgeworth, 2000) and a survey of academic libraries which identified factors that allow libraries to be successful or fail in fund raising (Hoffman, Smith, & DiBona, 2000).

**Library Marketing and Library Fund Raising**

Raising funds for a library is often tied to marketing a library. Donors are unlikely to donate to a library if they are unaware of it or if they do not think highly of it. Despite a general knowledge and appreciation of libraries by many potential donors, libraries are not always a high priority for donor giving. Karp (2006) stated:

> We all know that libraries are wonderful entities. Why is it, then, that librarians and libraries are often taken for granted? Why is it that academic libraries and academic librarians are sometimes relegated to less than central position at their institutions? Why does it sometimes seem that administrators don't recognize the critical importance of our services? (p. 101).

The same questions must be considered when contemplating library development work. How can donors be made aware that a library is a worthwhile beneficiary of a gift? How do donors perceive the academic library can impact decisions to give. How the library development officer frames the library for donors, therefore, influences donations. Marketing is one tool in creating this frame.

Marketing is not a new idea to libraries. The library literature has more than 100 examples of articles that can be recognized as dealing with library marketing which appeared before 1900. However, the terminology of the time was different (Carmichael, 1994). Briscoe (1921) argued that libraries should use such strategies as newsletters and movie tie-ins. Despite this early recognition of the power of marketing, however, much of the literature seems to have been forgotten in the halcyon days of public funding that occurred in the middle of the twentieth century. It was only in the 1970s and the decline in public funding that librarians rediscovered marketing (Geiger, 1993).
Librarians and information specialists were noted as beginning to use marketing techniques to encourage the growth of information systems in the 1970s (Weinstock, 1976). Marketing techniques were being advocated for in academic libraries in this time period as well (Bellardo & Waldhart, 1977). This was quickly followed by articles advocating marketing ideas for specialty areas of librarianship such as law, art, special, and school libraries (Koontz, Gupta, & Webber, 2006). The concept of marketing has figured prominently in the literature of library services in support of distance learning. Between 1999 and 2005, nineteen articles on the topic in peer-reviewed publications were identified (ACRL Distance Learning Section, 2008). Since distance learners rarely have the opportunity to utilize the library on campus, librarians in this area have made marketing a priority.

**Donors**

The bigger and richer a library is, the more likely it is to be engaged in fund raising (Wedgeworth, 2000). Martin (2002) noted, "As in so many areas, success breeds success" (p. 5). It appears as though larger and more successful academic libraries have more access to a larger pool of donors and a greater ability to get these donors to contribute to the library (Cervone, 2005). More donors would be aware of and interested in the library system of Harvard University for example than those at a smaller and less well known library system at Central Michigan University. Regardless of size or prestige, the ability of an academic library to be successful in development is access to and cultivation of donors.

Academic libraries have a major issue in regards to locating potential donors given their lack of an apparent built-in constituency (Martin, 1998). This sentiment was expressed by Clark (1986) who wrote: Many institutional development professionals feel that the university library presents a real challenge in garnering support. They argue that the colleges have a different ready-made constituency in their graduates, whereas the library offers no degree and has difficulty building a loyal base of support. (p. 20).

One way that libraries can gain access to donors is to be part of larger campus-wide development efforts (Martin, 2000). The absence of alumni often results in the library getting access to lists of donors from central development offices on a campus of donors who have proven in the past to be unresponsive to fund raising appeals and does not help the library much (Ruggerio & Zimmerman, 2004). The central development office is often unwilling to give the library access to a potential donor who may donate to a specific college instead. Even though this option might not seem productive, it gives alumni an additional option for supporting their alma mater (Paustenbaugh & Trojahn, 2000). Downes (1984) argued that every major gift to an institution of higher education should have a portion given to the library as the library supports the entire campus. The obstacles that are placed in front of libraries in accessing donors can also be turned into opportunities for the library to work hand-in-hand with units on a campus to make for a more potent donor appeal (Welch, 1985).

Alumni are the most obvious potential donors to an academic library. Many donors recognize the library as part of their higher education experience and are happy to give to the library (Brittingham & Pezzullo, 1990). Sherratt (1975) noted that successful fund raising appeals to alumni were based on "sentiment for the college years, pride of university association, and a demonstrated need to support the university" (p. 144). Thus, building on feelings of good will toward the college may be a successful development strategy. Some alumni are more reluctant, however, to give to the library. Matson (1989) reflected:

Our problem is that most alumni praise us—but take us for granted. We were always there, always serving quietly and efficiently, but largely unregistered in students' minds...They think of themselves as alumni of their school, department, athletic team, sorority/fraternity, or dorm, but not the library. (p. 26)

For this reason, it is important to make students aware of the needs of the library while they are still in school. In this manner, they may be more likely to contribute to the library after they graduate even if it takes decades for this to occur (Ezzell, 1989; Sherratt, 1975).
Wells (2006) notes that libraries are beginning to realize that providing some services and materials to alumni might prove to be valuable to them and to the library in terms of relationship building. “Today’s information-savvy graduates will miss the seamless access to quality resources, full-text articles and reports, and the research support and advice provided by their library alma maters” (p. 413). However, in a survey of 102 top academic libraries, Wells (2006) found that only 18% currently offered any type of service. This may change in the near future, however, as more vendors offer alumni licenses to their database and full-text journal products (Wells, 2006).

Several academic libraries have recently instituted alumni services or conducted feasibility studies of such services. Among them are Regis University in Denver (Turner, Sweany, Stockton, & Gaetz, 2009), the University of Ottawa (Horava, 2007), and Case Western University (Wells, 2006). In addition, the United Kingdom Open University Library, which serves only distance learners, recently conducted a pilot study to determine the efficacy of supplying full-text resources to MBA alumni (Smith, Street, & Wales, 2007). The results of these efforts have been mixed but they have all attracted some alumni who consider library resources and services valuable.

In general, donors to a library give because it makes them feel good, they believe the library is important, and because they believe a library is strong (Clark, 1991). An important factor in a donor's decision to give to a library is developing projects that will interest them (Welch, 1985). Cervone (2005) wrote, "A good development plan balances the wishes of a donor and the needs of a library" (p. 7). Donors to libraries are also likely to have never been married and/or to not have any children (Strand, 1990). Understanding the donor base is critical to developing an effective development plan.

Reaching out to potential donors can be done in several ways. Prospect research and public relations have been found to provide key elements of successful fund raising (Jordan, 1991; Sherratt, 1975). Three typical ways that institutions of higher education ask for donor support are face-to-face, telephone, and mail solicitation (Nichols, 1990). Historically, one third of philanthropy in the United States is attributed to direct mailing which makes it an important fund raising avenue for libraries (McGovern, 1990). However, in the 21st century, direct mail and telephone calls have lost their appeal and many libraries are no longer using them for fund raising although many still do (Cervone, 2005).

Once a donation is received, it is important to recognize the donor. How a library acknowledges a gift is as important as how it goes about first asking for the gift in the first place (Clark, 1991). There are many ways to acknowledge gifts from a simple thank you, either in print or in a Web publication, name plates on library building furniture, naming a collection after the donor, etc. Cervone (2005) wrote, "Ego is deeply involved in all giving. People giving to an organization usually expect some type of recognition" (p. 8). Thanking donors is a key to future success in fund raising and it is possible that this is something the academic library development officers would note as well.

Library Development on the Web

The world in which libraries have operated has changed dramatically in the last several decades. For centuries, the basic operational structure of libraries remained unchanged. However, the advent of the World Wide Web and the shift of information resources to electronic format resulted in a revolution in the ways that libraries are operated and how patrons are taught about library resources.

The impact the Web is having on libraries is not fully understood. Given this, it is not a surprise that the impact of the Web on the library remains uncertain. It is apparent though that here has been some impact already. The relatively recent introduction of the Web has been some impact on library development work as well. This fund raising trend has been noted by library development officers and directors. By 2002, one third of the libraries in the American Research Association had information on their index pages on giving to the library. An additional 50% had information on giving to the library but this information was located within sub-pages on the site (Martin, 2002). This shift of some fund raising activities to the Web is in line with American charities as a whole who raised 20.3 million online in 2006 (Wallace, 2007).
Libraries have used a variety of methods to raise money on the Web. One approach is to use the Web to allow current and new Friends of the Library members to pay their dues (Corson-Finnerty & Blanchard, 1998). Not surprisingly, the design of the webpage makes a difference in the success of online donations for the library. One non-profit organization found that it could increase its online completion of the donation form from 12% to 70% by making the form more informative about gift options (Wallace, 2007). Another simple option is just to put a “Donate Now” button on a library web site. Gerdin (2005) wrote, “Online donations offer a quick, easy way to donate that is attractive to a new generation of tech-savvy donors. With a donation button on your library Web site, visitors can donate to your library online” (p. 212).

Fund Raising among Alumni of Distance Learning Programs

Clearly alumni have proven to be a good source for library fund raising. The traditional view however, may overlook those who have recently graduated from distance learning programs. As students who are generally older and perhaps more financially solvent, distance learning alumni may be prepared to donate to the library as soon as they graduate rather than years down the line after they established themselves financially. In addition, distance learning students work full time and may be more aware of the usefulness of library resources to their professional lives while students, and thus be more willing to contribute financially to the library in return for access to resources.

Indeed, in the first decade of the 21st century, a growing number of alumni at Central Michigan University (CMU) have been requesting access to library resources. Although these requests, which in 2009 averaged five to ten per month, come from all manner of alumni, the overwhelming number are from recent graduates of Off-Campus Programs. While students, those enrolled through CMU Off-Campus Programs are generally fulltime workers, with an average age in the late thirties, who use library resources extensively. Upon graduating, many express a willingness to pay for continued access to the library resources. In addition, an alumni resources web site maintained by the library unit that supports CMU Off-Campus Programs, received 7,365 hits from January 2007 to February 2009 (T. Peters, Personal Communication, March 31, 2009). Although it serves primarily as a gateway to university resources for alumni, it is reasonable to believe that many people visit this web site in the hope of finding access to library resources and services.

In the late 1980s, the CMU Libraries were successful in targeting alumni who were graduates of Off-Campus Programs with a phone-a-thon, according to the Dean of Libraries (T. Moore, Personal communication, December 4, 2009). It was spectacularly successful for many years and often raised in excess of $80,000. There was little cost to the library. Every year Dean Moore would visit student employees who were assigned to make calls for the library for several days. He would give a pep talk, highlight services, and present the student employees with gifts. Calls to alumni of the Off-Campus Programs continued for many years until institutional changes brought this annual campaign slowly to an end. Other units on campus, including Off-Campus Programs, saw the distance learning alumni as their graduates and they resisted efforts by the library to claim them in fund raising efforts. The library continued to have access to the phone-a-thon but it has shifted from distance learning alumni to more traditional alumni by the early 21st century. Moore (Personal communication, December 4, 2009) said that distinctive library programs for Off-Campus Program alumni are worthwhile and should be pursued if no one else is pursuing these potential donors.

In a request for information from other libraries conducting fund raising among distance learning alumni sent to the Offcamp list in October, 2009, the authors received only one response. However, it referred to fund raising among alumni of a distance learning library school program for the college rather than the library, so further investigation was not pursued. Thus, they conclude that there is little being done currently in academic libraries to target fund raising efforts to alumni of distance learning programs.

One possible approach that libraries may consider in developing graduates of distance learning programs as potential donors is to establish access to a set of library resources, such as databases popular among these alumni when they were students, through annual membership in a Friends of the Library organization. Since there is some evidence, at least from the Central Michigan University Libraries
experience, that alumni appear to be willing to pay for continued access to full-text resources after graduation, it might be beneficial for academic libraries with large populations of distance learning alumni to develop trial programs to test the efficacy. If a subscription program is successful, the fees could make it self-supporting, and at a minimum, provide a new service for alumni. In a best case situation, alumni who join a Friends of the Library organization may identify themselves as library supporters and thus be considered eligible for further library fund raising efforts.

Conclusion

In the aftermath of the recession of 2008, higher education in general and academic libraries in particular, are dealing with cuts from public appropriations, tuition and donations. Locating new sources of revenue are increasingly important to maintain basic services and collections in libraries. Alumni of distance learning programs might be a good group to pursue as potential library donors. They are often older and so may be more financially secure that a younger recent graduate. In addition, they express satisfaction with library services that may indicate a relationship that could be developed further.

There are doubtless a number of ways that such alumni can be approached, and more work in this area is needed. The literature of the library field is not well developed in the area of academic library philanthropy. Much of the work in the area is recent but the alumni of distance learning programs have not been explored as potential donors. It would appear that more research needs to be done in this area. Further, it would make sense for academic libraries with these types of donors to begin active campaigns to connect with this potential donor group. Logistics and politics may make any attempt difficult but the potential increase in charitable revenue should make it worth attempting.
References


Research Performance in Undergraduates Receiving Face to Face Versus Online Library Instruction: A Citation Analysis

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Abstract
In 2008, Rogers State University’s Stratton Taylor Library launched an embedded librarian service for the university’s online classes. While looking for a method to assess the effectiveness of the library instruction program, it was discovered that there has been very little quantitative research into the research activities of students who received embedded librarian services, compared to face-to-face students receiving traditional library instruction. A citation analysis was performed on the term papers of three sections of an upper-division Management Information Systems class, and the results are discussed. The researchers argue this methodology is useful both for individual libraries hoping to assess their embedded librarian programs, and researchers interested in exploring the overall effectiveness of this new mode of information literacy instruction.

Introduction
In the last decade, the rise of online education has profoundly changed the nature of research and library services in the United States. According to a 2008 report by the Sloan Consortium, more than 20% of all US post-secondary students took at least one online course in Fall 2007. In addition, enrollment growth rates for online courses far outstrip those of the overall student population. This trend is seen in microcosm at Rogers State University (RSU), a regional 4-year public university located in Claremore, Oklahoma. In 1992, RSU built on a long history of offering distance education by satellite campuses, correspondence, and tele-courses by becoming the first university in Oklahoma, and one of the first in the nation, to offer degree programs online (Rogers State University).

As the popularity of RSU’s online offerings grew, so did the need for the library to provide new services to ensure that online learners enjoyed the same access to resources and research support as did students who studied at the main campus. In the summer of 2008, RSU’s Stratton Taylor Library launched Oklahoma’s first embedded librarian service. Upon instructor request, a librarian would be added to any course in the university’s course management system as a teaching assistant. The librarian would work with the instructor to develop a custom video or PowerPoint lecture that would be presented to the students early in the semester and explain research skills and resources particularly useful for that course, as well as research assignments designed to acquaint students with the resources they would be using throughout the semester. Finally, the librarian would be available on the course discussion board throughout the semester to answer questions and to make research suggestions when appropriate.

What began as a small pilot program in a single section of an upper division MIS class quickly grew to serve six teachers, eleven course sections, and over 250 students in Spring 2009. As the program grew, attention turned to determining the value of a program that had received high, but anecdotal, praise from faculty, students, and library staff. However, a review of the literature showed that while there have been many case studies of Embedded Librarian programs, relatively few have tried to quantitatively assess the effects of their programs. Embedded Librarianship is a new paradigm in library instruction and a relatively unexplored area in the literature, and the authors hope that their work will be a first step in answering many questions faculty and administrators will have about assessing the effectiveness of this method of library instruction in an era of shrinking budgets and expanding online programs.
Literature Review

The Embedded Librarian concept entered the library literature around 2004, building on the work of librarians such as Getty, Burd, Burns, and Piele (2000), who designed custom tutorial modules and lectures for professors to include in their online classes. Soon librarians began to take the next step in integrating their services into online classes by inserting themselves as well as the library’s content into online classes. In 2005, Barbara L. Dewey used the phrase “Embedded Librarian” for the first time in a scholarly publication, defining it as

A more comprehensive integration of one group with another to the extent that the group seeking to Integrate is experiencing and observing, as nearly as possible, the daily life of the primary group… [requiring] more direct and purposeful interaction than acting in parallel with another person, group, or activity. Overt Purposefulness makes embedding an appropriate definition of the most comprehensive collaborations for librarians in the higher education community (p. 6).

While Dewey argued for a new paradigm of librarianship where libraries could become embedded in every facet of campus life from research to student activities to fundraising, many librarians involved in online and distance education seized on the concept as a way to ensure library services were available and relevant to the growing numbers of students who took most or all of their classes online. Dewey’s article was followed with a steady stream of case studies from librarians who had begun “embedding” themselves into online courses as assistants or even co-teachers, such as Matthew and Schroeder (2006), Ramsay and Kinnie (2006), York (2006), Bielema, Crocker, Miller, Raynolds-Moehrle, and Shaw (2007), and Chesnut, Henderson, Schlipp, and Zai (2009).

These papers discussed the practical issues involved in launching embedded librarian services, such as gaining buy-in from faculty members and campus IT, taking services to students without interfering with the instructor’s role, revising old instruction strategies and techniques to fit a new type of teaching, and dealing effectively with the semester-long commitment of checking in with multiple course discussion boards. York and Vance (2009) combined their own experiences with those cited in the case studies above to develop a set of best practices for embedded librarians, with a particular emphasis on building relationships with the Course Management System administrators, avoiding becoming overextended, and marketing the service effectively.

However, while there has been a surfeit of case studies and other articles related to the successful implementation of embedded librarian services, the authors could find no articles in the literature that attempted to quantify whether or not an embedded librarian had a positive or negative effect on students’ research skills, nor if any effect differed significantly from those seen in face-to-face library instruction or other online instruction tools such as web tutorials. The closest study found in the recent literature was Zhang, Watson, and Banfield (2007), who reviewed a collection of studies that compared pre- and post-test performance of students who received face-to-face library instruction with those who completed online instruction tutorials. Due to differing methodologies and instruction methods in the various studies in the collection, the researchers were unable to draw a definite conclusion. However, the data suggested there was no statistically significant difference between the performance of students who received face-to-face instruction and those who completed online tutorials.

With five years of case studies in the literature, the authors of this paper thought the time was ripe to move to a quantitative assessment of embedded librarian services. Citation analysis, a statistical comparison of the number, age, and/or type of sources cited by a group of student papers as well as the accuracy of the citations provided, offered the advantage of being a well-established methodology that would objectively measure the results of students’ research efforts with no additional effort needed on the students’ part. Smith (1981) provides a key early discussion of the benefits and drawbacks of the methodology, and, while not a true citation analysis in the sense described above, Dykeman and King (1983) were one of the first to subjectively grade the quality of student papers and their sources on a rubric to assess the effectiveness of library instruction. Gratch (1985) examined the strengths and weaknesses of Dykeman and King’s work, as well as several similar studies evaluating research paper bibliographies. Gratch recommends researchers formulate a precise, quantifiable hypothesis, and avoid ratings criteria that require subjective judgments about the quality of sources or writing.
More recently, citation analysis has become an increasingly popular method of evaluating both instruction effectiveness and the impact of the internet on undergraduate citation behavior. Hovde (2000) is one of the first to suggest citation analysis as a solution to the subjectivity issues identified by Gratch and others in evaluating instruction effectiveness. Instead of evaluating bibliographies or papers subjectively by means of a rubric or similar grading tool, Hovde simply examined the type (book, article, web site, etc.) and origin (print or electronic) of bibliography entries of a group of students who received library instruction, with no attempt to subjectively evaluate the “quality” of sources or the paper itself. In the early 2000s Phillip M. Davis performed a series of three citation analyses exploring the citation patterns of undergraduates in the early days of the web, as the internet gained popularity, and as instruction methods evolved to provide students with tools to evaluate web sources. After a shaky start and a drop in the use of library resources, Davis’s final study showed that students who had received a new instruction course emphasizing the importance of using and identifying reliable sources resulted in students citing more scholarly sources, and more accurate and established web sites. (Davis and Cohen 2001; Davis 2002, 2003).

As familiarity with the internet’s benefits and drawbacks grew, citation analyses began to find students citing higher-quality web sources, as Robinson and Schlegl observed in their 2005 analysis of two sections of a political science course, one section receiving instruction only, the other receiving instruction and also graded with potential penalties for not selecting quality sources as described in their instruction session. Finally, Clarke and Oppenheim’s (2006) citation analysis of graduate theses is worth attention for instruction librarians interested in learning more about citation analyses. The paper included an exhaustive literature review that starts from the first principles of defining a citation and its importance for bibliographic scholars, and provides a history of the evolution of the methodology, its benefits and pitfalls, in addition to a summary of key citation analyses similar to their own research. The authors highly recommend this paper to any researcher who would like to know more about citation analysis than we can cover in our brief introduction.

Upon reviewing the literature to date, we noticed the overall lack of quantitative examinations of the effectiveness of embedded librarian services. We also learned that citation analysis provides a concrete, objective methodology that has been historically used to test the effectiveness of traditional instruction methods, and that citation analysis works best when the traits being examined are clearly defined and easily measured. This article will take the lessons learned from both fields of study to determine whether students receiving traditional library instruction and those receiving embedded librarian services exhibit similar patterns in the types of sources cited.

Methods

In this study, citation analysis was used to examine and compare the research papers written by three sections of an undergraduate upper division Management Information Systems (MIS) course held in fall of 2008 and spring of 2009. The students in this class are usually senior Business or Applied Technology majors, and have been at the institution for at least one year. While each section covered the same material, had the same textbook, and the same instructor, two sections were delivered in an online distance learning format, while the third was a traditional presentation of twice weekly face-to-face meetings. In the face-to-face class section, the Access Services and Distance Learning Librarian visited with the class for one 50-minute class period to give a traditional Information Literacy instruction session, with emphasis placed on key Business and Technology databases and reference works, as well as finding and evaluating online sources crucial to research in the technology and business fields, such as white papers, corporate and trade organization web sites, government documents, and professional trade journals. Special emphasis was placed on identifying and discussing an author’s vested interests and agendas, particularly when using a corporate web site or white paper.

In the online sections of this course, the same librarian provided a custom PowerPoint tutorial, including voice over and screen shots, as well as links to key resources, covering the same material that was discussed in the face-to-face sections. In addition, she served as “embedded librarian” in each online section, with “Teaching Assistant” permissions in the course management system. The librarian read all posts on the course, including a special area designated for research questions, and responded with helpful tips or suggested resources as appropriate throughout the semester. Both online and face-to-face class
sections were strongly urged to review the library’s online web tutorials, which provide step-by-step instruction in using library resources, as well as some basic guidance on evaluating and citing sources.

Each class was given identical instructions as to the research paper assignment. Each student was to present a technical topic related to information systems. It was to be a strategic analysis paper that was to be six to nine pages long. The students were directed to introduce and describe the technology under discussion, cover the technology’s strengths, benefits, limitations, and weaknesses, and provide recommendations and analysis regarding the technology’s business applications. The students were required to use at least five different sources and no more than three could be Internet-only sources. After the semester ended and the students papers were submitted electronically, all citations from each paper were stripped from their documents by the professor and sent to the librarian.

The librarian conducted a citation analysis categorizing and counting both the citations and the sources cited. Eight categories of citation type were defined to distinguish the different types of electronic and print sources used in a rapidly moving field such as Management Information Systems. These categories were adapted from similar lists defined in earlier citation analyses of student research papers conducted by Edzan (2008), Hurst (2007), and Tuñón and Bridges (2006, 2009). To distinguish between scholarly, trade, and general interest publications, the librarian referred to the 17th Edition of Magazines for Libraries, Fulltext Sources Online, and the categorizations provided in library databases used by students to retrieve articles. The types of citations are defined in Table 1.

Each source cited by a student was assigned a category based upon Table 1 criteria. Both the list of citations as well the sources cited (several sources were cited multiple times) were analyzed to test the null hypothesis, i.e. that there would be no statistically significant differences between the distribution of source categories cited between online and face-to-face class sections, in either citations or sources.

Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Textbooks, scholarly/technical books, and dictionaries</td>
</tr>
<tr>
<td>B</td>
<td>Peer-reviewed journals, dissertations, and conference proceedings</td>
</tr>
<tr>
<td>C</td>
<td>Publications/websites from educational orgs.</td>
</tr>
<tr>
<td>D</td>
<td>Trade, technical, and industry publications/websites</td>
</tr>
<tr>
<td>E</td>
<td>Corporate websites, eds., and whitepapers</td>
</tr>
<tr>
<td>F</td>
<td>Non-scholarly, non-industry specific publications (including general business publications, encyclopedias and websites not belonging to any other defined group)</td>
</tr>
<tr>
<td>G</td>
<td>Primary sources and Personal communications, blogs, and social networking sites</td>
</tr>
<tr>
<td>H</td>
<td>Government publications</td>
</tr>
</tbody>
</table>

Results

The results of the citation analysis of total citations from the subject papers are provided in Table 2. Due to the technical and fast-moving nature of the subject matter, students were expected and encouraged to focus their research on reliable resources that might not be “traditional” scholarly or peer-reviewed sources, such as trade publications (Category D), corporate web sites, white papers, and publications (Category E), and to a lesser degree, specific well-respected general business publications (Category F).
Table 2

Results of Citation Analysis: Total Citations

<table>
<thead>
<tr>
<th>Category</th>
<th>Online instruction</th>
<th>Traditional (Face to Face) instruction</th>
</tr>
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<tr>
<td></td>
<td>Amount</td>
<td>% of total</td>
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<tr>
<td>A</td>
<td>22</td>
<td>8.91</td>
</tr>
<tr>
<td>B</td>
<td>34</td>
<td>13.77</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>2.02</td>
</tr>
<tr>
<td>D</td>
<td>79</td>
<td>31.98</td>
</tr>
<tr>
<td>E</td>
<td>40</td>
<td>16.19</td>
</tr>
<tr>
<td>F</td>
<td>42</td>
<td>17.00</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>2.02</td>
</tr>
<tr>
<td>H</td>
<td>20</td>
<td>8.10</td>
</tr>
<tr>
<td>total</td>
<td>247</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from the Table 2 data, the source categories cited by the two groups were very similar. However, a chi-square test was performed by the professor, the full results of which can be found in Appendix B. To summarize, the statistical analysis returned an asymptotic significance of 0.963, indicating the variation between the two datasets fell well within the bounds of statistical insignificance. The only noticeable difference between the online and face-to-face sections was in the percentage of peer-reviewed journal articles cited (Category B). However, this data point was skewed by two students in the online sections who cited an abnormally large number of peer-reviewed journals due to the nature of the topics they selected. If the results of these two bibliographies are removed from the study the two sets of data become nearly identical.

Table 3

Results of Citation Analysis: Sources Cited

<table>
<thead>
<tr>
<th>Category</th>
<th>Online instruction</th>
<th>Traditional (Face to Face) instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>% of total</td>
</tr>
<tr>
<td>A</td>
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<td>8.33</td>
</tr>
<tr>
<td>B</td>
<td>28</td>
<td>15.56</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>2.78</td>
</tr>
<tr>
<td>D</td>
<td>59</td>
<td>32.78</td>
</tr>
<tr>
<td>E</td>
<td>32</td>
<td>17.78</td>
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<tr>
<td>F</td>
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<td>G</td>
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<td>2.78</td>
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<td>H</td>
<td>8</td>
<td>4.44</td>
</tr>
<tr>
<td>total</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen, there is little difference between the two analyses, with the exception of slightly smaller percentages for general publications and government documents. This was expected, as five of the 10 most-cited sources fit in one of those two categories. Again, a comparison of the sources cited show no statistically significant difference between the citation patterns of the online and face-to-face cohorts (Asymp. Sig. of 0.993), with the exception of the slightly skewed result for peer-reviewed journals discussed above.

Discussion

The initial focus of this study was to examine the differences in information literacy performance in online course delivery students versus traditional face-to-face course delivery students. Citations from research papers assigned to sections of both delivery methodologies were analyzed using the citation analysis process. There were virtually no differences between the performances of the online students versus the face-to-face students. We interpret this to mean that in both course delivery methods the students
are receiving similar information literacy instructions thus implying that the embedded librarian process is providing the online students with similar support as the traditional face-to-face students receive.

There are some limitations to this study. We examined only two semesters of work for only three sections of 71 total students. Thus the population sample is fairly small. The subject matter for the research paper for the MIS class is also fairly technical and requires timely references. Category A (textbooks, scholarly/technical books, and dictionaries) and Category B (Peer-reviewed journals, dissertations, and conference proceedings) materials typically require long lead times for publications and often are not an appropriate source for very timely technical subjects. Also, we did not have a convenient comparison sample of students’ work prior to the embedded librarian process. In other words, exploring whether or not the online or face-to-face students’ work has been improved due to library instruction is beyond the scope of this study.

While not proving causation, the fact that the data does not reject the null hypothesis due to a lack of statistically significant differences implies that online library instruction, in this situation at least, was comparably effective in meeting the students’ library instruction needs, fulfilling the Association for College and Research Libraries’ Standards for Distance Learning Services by providing online students with equivalent information literacy education. While preliminary and limited in scope, this data should reassure administrators who need quantitative research supporting the effectiveness of resource-intensive services like embedded librarians. In addition, this methodology is relatively easy to implement for librarians who are interested in assessing their own distance education efforts, and who have faculty partners who are willing to share their students’ bibliographies.

It is also important to note what this research does not test as well as what it does examine. For the purpose of this article, we were not interested in proving the effectiveness of a library instruction program, therefore a control group receiving no instruction was not included in this study. This research simply explored whether or not students in classes where all variables were identical except for the method of course delivery and information literacy training would cite a similar ratio of source types. Future study should explore additional variables beyond citation type, such as the currency of sources cited and average bibliography size, and will also include a larger sample size, both through continued analysis of future semesters’ term paper citations and by expanding the data set to include other courses and institutions where there are both online and face-to-face sections of the same class receiving library instruction.

While this research is deliberately limited in scope, the authors hope that their work will establish a beachhead for future research involving citation analysis as a means of testing the relative effectiveness of embedded librarian programs and other forms of library instruction, both for individual institutions seeking a relatively simple form of internal assessment, and for researchers in the field of distance education librarianship interested in exploring whether these findings are borne out when a larger number of courses and institutions are analyzed in this manner. Online education is becoming an increasingly predominant form of course delivery for most colleges and universities, and it is imperative for academic librarians to not only create and implement innovative methods of library instruction, but to use established methods of assessment to identify those methods’ strengths and weaknesses, and to validate the ongoing role of information literacy instruction and the academic library in an evolving higher education landscape.
References


## Appendix A
### Sources Receiving Three or More Citations

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<th>Online 2</th>
<th>F2F</th>
<th>Total</th>
</tr>
</thead>
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<td>12</td>
<td>1</td>
<td>0</td>
<td>13</td>
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<td>A</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>11</td>
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<td>D</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>11</td>
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<td>6</td>
<td>1</td>
<td>3</td>
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</tr>
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<td>1</td>
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<td>9</td>
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<td>F</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>8</td>
</tr>
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<td>2</td>
<td>2</td>
<td>5</td>
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<td>2</td>
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<td>2</td>
<td>1</td>
<td>1</td>
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<td>2</td>
<td>0</td>
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<tr>
<td>Asymp Sig.</td>
<td>.963</td>
<td>.993</td>
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### Sources Cited

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<th>F2F - .750</th>
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<tbody>
<tr>
<td>Df</td>
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<td>6</td>
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<tr>
<td>Asymp Sig.</td>
<td>.993</td>
<td>.993</td>
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</table>
Ebooks Revisited: Surveying Student Ebook Usage in a Distributed Learning Academic Library Six Years Later

Rosie Croft
Corey Davis
Royal Roads University

Abstract
This paper is the result of a 2009 survey of student usage of ebooks at Royal Roads University Library. The authors found that the proportion of students using RRU Library ebooks has gone up since a similar 2003 survey, although only just above half of students are using RRU Library ebooks. An almost identical number of student respondents (approximately 54%) said “no” to preferring a print version of the book over the ebook version of the book in both the 2003 and 2009 surveys. The majority of students rated the ability to download an ebook to a hand-held device as not important. There has been a notable increase in the use of ebooks for course readings from 2003 to 2009. A lack of awareness of RRU Library ebooks remains the top reason cited by students for not using them.

Introduction
This is a tumultuous time for books, a time when “profound structural transformation is roiling the entire book-publishing and book-selling industry” (Roderick, 2009, para. 3). Ebooks are a big part of this tumult, and it is by no means clear what will become of them. In the words of Los Angeles Times blogger Carolyn Kellogg (2009), “it’s a mad venture, looking into the future of ebooks” (para. 1).

Many prognosticators have been proven wrong before, and much of the present discussion is suggestive of another technology: microfiche. In its heyday, photography and miniaturization—like digitization today—was, for many, sounding the death-knell of the printed word:

It is quite likely that vast areas of publishing...may be largely taken out of the printed medium...As a result, the micrographics industry is growing rapidly - at a rate of about 18% annually, or roughly three times the gross national product, according to the National Microfilm Association (Starr, 1974, p. 35).

While information technology has penetrated society to an extent almost unimaginable in the 1970s—when the above was written—such passages are evocative of the current ebook debate, especially in consideration of new product offerings like the Kindle, and potentially transformative network-based resources like Google Books Search.

While the future of the book remains unclear, it is true that ebooks are, “an exciting and controversial topic for librarians, publishers, and users” (Shelburne, 2009, p. 59). Libraries of all types are spending increasingly more on ebooks (Primary Research Group, 2009), and although ebook sales still account for a very small percentage of total book sales (Association of American Publishers, 2009), it seems that the ebook—at least in the academic library—is becoming an established format for monographs (Clarke, 2009). According to the Joint Information Systems Committee (JISC), “after many years of anticipation there are strong reasons for believing we have ebook take-off” (Nicolas et al., 2008, p. 311).

Ebooks are proving themselves as an established format at the Royal Roads University Library. Established in 1995 following the closure of Royal Roads Military College, and with a mandate to grant applied professional graduate and undergraduate degrees, the relatively small monographic collection consists of approximately 52% printed books and 48% ebooks. The growth of the ebook collection is a
result of efforts to aggressively collect networked information resources in order to support a unique educational model, where at any given time approximately 80% of students—and a considerable number of teaching faculty—work at a distance. RRU does not operate according to a traditional academic calendar: programs begin in every month of the year, with particularly high intake levels in the summer. The distance learning model allows students to gain credentials while working because most programs have a limited on-campus residency of two or three weeks, two or three times during their program. Most of the undergraduate students, however, attend classes fulltime and in-person during a single, full calendar year when they complete third and fourth year studies in a compressed timeline.

Because the focus of RRU is distributed learning, the Library has always focused on providing high-quality networked information to support the research and scholarship needs of students and faculty. This focus coincided in the late 1990s with the explosive growth of e-journals and online reference works. Ebooks have always seemed a natural extension of this collection emphasis. The Library purchased its first ebook collection in 2000, and in 2003, conducted a user survey to determine who was using ebooks, for what purpose, and to determine how students and faculty found the readability and usability of ebooks and ebook platforms overall (Croft & Bedi, 2005). Approximately 70% of respondents had never used ebooks (p. 121). The 30% that had, however, were enthusiastic about their potential (p.123). Overall, most students did not find the existing ebook selection adequate for their academic needs, although students in the area of leadership and business were more satisfied than others. Perhaps most surprisingly at the time, there was no clear preference for ebooks over printed books, even though most students surveyed were taking their courses at a distance.

Since that time, the RRU Library ebook collection has grown significantly, as has the amount of time devoted to demonstrating the use of ebooks during Library instructional sessions that all students attend during their on-campus residencies. Librarians have also started building subject guides with sections devoted to helping students identify ebook content specific to their research and learning needs. The current survey is meant to be viewed along-side Croft and Bedi’s 2003 results in a loosely longitudinal way, to see where progress has been made, and where more resources (or fewer) should be directed.

Literature Review

As academic libraries continue to expend considerable resources collecting and providing access to books in electronic format (Primary Research Group, 2008), it is important that decisions are made with as much information as possible. Unfortunately, over 80% of libraries surveyed in a recent Primary Research Group survey do not make extensive use of usage data when making acquisitions and access decisions relating to ebooks. There is, however, a considerable body of research forming around ebook usage in academic libraries generally. These studies tend to focus on usage statistics or user surveys. An early usage data study from Columbia University showed higher usage of ebooks compared to their print counterparts (Summerfield, Mandel, & Cantor, 1999), and a more recent study at Duke University also showed substantial ebook usage relative to the same titles in print (Littman & Connaway, 2005). This Duke University study also demonstrated higher ebook usage in certain subject areas (such as education, medicine, psychology, and computers), while other studies have shown similar results, especially in the areas of computer science, business, (Rowlands, Nicholas, Jamali, & Huntington, 2007), and quick reference (Slater, 2009). A 2001 study at the University of Texas showed increased usage when ebook records were made searchable in the OPAC (Dillon, 2001b), and subsequent studies have also shown that ebooks selected on a title-by-title basis are better used than those made available through aggregated collections like netLibrary or ebrary (Slater, 2009; Sprague & Hunter, 2008). According to a major 2009 Primary Research Group survey (2008), these aggregated collections account for 70% of total ebook spending in libraries overall.

Usage-based studies suggest that: ebook usage overall is steadily on the rise; that certain subject areas, such as business and quick reference, get higher usage than others, such as the humanities; that exposing ebook records for search in the catalogue or other information system increases usage; and, that titles selected individually by librarians tend to get more usage than similar titles in package collections.
Many of the results of user surveys have reinforced conclusions reached by studying usage statistics. Croft and Bedi’s (2005) original survey revealed that business students were the primary users of ebooks at the time, but they were also somewhat reluctant users. Students are clearly interested in the possible advantages that ebooks present, such as online access and keyword searching, but as Croft and Bedi’s study and other more recent ones have shown, there are also concerns around reading on screen, navigation, and the basic usability of ebook systems (Shelburne, 2009). A 2007 survey of library school students indicated that difficulties in reading and browsing are a common concern (Chu, 2003), which is a conclusion also reached by a larger study at the University of Denver (Levine-Clark, 2006). A University of Rochester study showed that 63% of users experienced difficulties with netLibrary (Gibbons, 2001), and a 2008 study at Arizona State University also found that faculty, although interested in using ebooks, faced obstacles when it came to using existing ebook platforms (Carlock & Parry, 2008).

Librarians too have significant concerns with users’ abilities to make effective use of the ebooks in their collections (Primary Research Group, 2008, 2009). Perhaps this is one of the reasons that print books still remain important within collections (Dillon, 2001a), and why many users feel that ebooks do not lead them to read less on paper (Shelburne, 2009). According to a study at University of Illinois Libraries, one in ten students indicated that they would be reading books mostly online, almost 30% of students indicated a preference for print, while the majority (56%) saw themselves using a combination of both (Shelburne, 2009). A major study by ebrary has also demonstrated that while a slight majority of students have accessed ebooks, considerable numbers (49%) have not, and fully one-third did not know that their library had ebooks (ebrary, 2008). However, a similar study by The United Kingdom's Joint Information Systems Committee (JISC) National E-Books Observatory project showed that 62% of students were already using ebooks for their academic work (Rowlands, Nicholas, Jamali, & Huntington, 2007). Overall, user survey research suggests that students appreciate the ability to access information anytime and anywhere, that real limitations based on the usability of ebook platforms still persist, and that ‘good old-fashioned paper’ is still important.

**Ebooks at RRU**

The RRU Library purchased its first ebook collection in 2000, which consisted of a consortial purchase of 1078 netLibrary ebooks. With the addition of several hundred more netLibrary titles over the next few years, and an additional 13,000 titles from ebrary, RRU Library had approximately 18,000 ebooks in its collection by the time of Croft and Bedi’s 2003 survey.

As of December 2009, the RRU Library had nearly 55,000 ebooks in five major aggregated collections, many of which were either purchased or are licensed through consortia such as the Canadian Research Knowledge Network (CRKN) and The Council of Prairie and Pacific University Libraries (COPPUL). With just over 48,000 print book holdings, ebooks now form a small majority of all monographs available through the RRU Library.
Figure 1. A majority of 55,000 ebooks at the RRU Library are delivered through the ebrary platform. Other major platforms are indicated.

Figure 2. ebrary usage continues to climb, as indicated in total user sessions per year.
In revisiting the survey conducted by RRU librarians Bedi and Croft in 2003, the authors hoped to gain data on changes in RRU students’ use of and attitudes toward ebooks over time, as well as gather data on current use and attitudes, while also exploring the impact of new technological developments, specifically the proliferation of handheld devices. Given the distributed learning focus of RRU and its library, ebooks have always held important potential for improving access to monographs for our students, but results from the 2003 survey noted that the majority of RRU students and faculty had not used ebooks (Croft & Bedi, 2005). Also, at that time, the preference for print over ebook versions of monographs for those who had used them was close to an even split among students. To give continuity to the studies, some of the questions from the 2003 survey were used in the 2009 survey to create points of comparison. Given the increase of freely available and non-scholarly ebooks, comparing students’ use of licensed resources versus unlicensed resources of a similar nature was of interest in 2009. The increased level of portability afforded to ebooks by handheld devices may significantly influence their current and future use and usefulness, so some of the survey questions were also geared to gathering data regarding students’ use of and interest in handheld devices.

SurveyMonkey® was the tool used to conduct the survey, and a moderately priced gift certificate drawprize was used as an incentive to entice participation. A link to the survey was distributed to students via email using two distribution lists that together include all students. RRU programs do not follow a typical academic calendar, so the timing of the survey did not coincide with any particular peak or slow time in program participation for students. The survey was open for 29 days. The faculty were not surveyed in 2009.

Results and Discussion

The survey garnered a healthy response rate of 779 total respondents, from an FTE of approximately 1970 students. Similar to Croft and Bedi’s 2005 survey, the highest number of respondents
came from the Master of Leadership program, closely followed by Master of Business and Administration program. (see Table 1).

Table 1

*Student Survey Respondents by Program*

<table>
<thead>
<tr>
<th>What program are you in?</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA Justice Studies</td>
<td>2.1%</td>
<td>16</td>
</tr>
<tr>
<td>BA Professional Communication</td>
<td>8.0%</td>
<td>62</td>
</tr>
<tr>
<td>BComm Entrepreneurial Management</td>
<td>12.2%</td>
<td>95</td>
</tr>
<tr>
<td>BSc Environmental Science</td>
<td>1.4%</td>
<td>11</td>
</tr>
<tr>
<td>BSc Environmental Management</td>
<td>0.9%</td>
<td>7</td>
</tr>
<tr>
<td>MA Conflict Analysis and Management</td>
<td>3.2%</td>
<td>25</td>
</tr>
<tr>
<td>MA Disaster and Emergency Management</td>
<td>3.5%</td>
<td>27</td>
</tr>
<tr>
<td>MA Environmental Education and Communication</td>
<td>3.1%</td>
<td>24</td>
</tr>
<tr>
<td>MA or MSc Environment and Management</td>
<td>2.2%</td>
<td>17</td>
</tr>
<tr>
<td>MA Human Security and Peacebuilding</td>
<td>1.2%</td>
<td>9</td>
</tr>
<tr>
<td>MA Interdisciplinary Studies</td>
<td>0.4%</td>
<td>3</td>
</tr>
<tr>
<td>MA Leadership</td>
<td>19.5%</td>
<td>152</td>
</tr>
<tr>
<td>MA Learning and Technology</td>
<td>3.0%</td>
<td>23</td>
</tr>
<tr>
<td>MA Professional Communication (including specialization in IIC)</td>
<td>11.2%</td>
<td>87</td>
</tr>
<tr>
<td>MBA Master of Business Administration</td>
<td>13.0%</td>
<td>101</td>
</tr>
<tr>
<td>MSc Environment and Management</td>
<td>3.3%</td>
<td>26</td>
</tr>
<tr>
<td>Tourism program (any of them)</td>
<td>1.5%</td>
<td>12</td>
</tr>
<tr>
<td>Any certificate or diploma program with the Centre for Applied Leadership Management (CALM)</td>
<td>3.2%</td>
<td>25</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>7.3%</td>
<td>57</td>
</tr>
</tbody>
</table>

The overall response rate distributed across the programs is generally representative of the relative sizes of the different programs. A significant number of respondents, however, identified themselves in the ‘other’ category. An examination of the textual clarifications made by those students revealed that the majority of those respondents are either part of a particular graduate certificate program that was not taken into consideration in the survey design, or other certificate programs.

In response to the question “have you ever used ebooks of any kind? (e.g., through a public or academic library via Google books or other websites, etc.)” 76.1% of students responded “yes” and 23.9% responded “no”. In response to the question “have you ever used or tried to use the ebooks available through RRU Library?” 51.2% said “yes” and 48.8% said “no”. Comparatively, in the Croft and Bedi (2005) study, 32.82% respondents answered “yes” to the question “have you ever used ebooks?” while 67.18% answered “no”. The six years between the two surveys certainly demonstrate an increase in use of ebooks, but still only slightly more than half of students are using the Library’s ebooks. To discover if there was any correlation between having used ebooks of any kind and having used ebooks offered by the RRU Library, the results of both questions were cross-tabulated (see Table 2).
Table 2

Use of ebooks of Any Kind

<table>
<thead>
<tr>
<th>Have you used ebooks of any kind (e.g. through a public or academic library, via Google books or other websites, etc.)?</th>
<th>Have you used or tried to use the ebooks available through RRU Library?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer Options</td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td>372</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
</tr>
</tbody>
</table>

answered question 774

The cross-tabulation shows a strong correlation between having used ebooks of any kind and having used or tried to use RRU Library ebooks. As ebooks becoming increasingly available elsewhere as well as libraries, perhaps use of ebooks available through libraries will also further increase.

For those who answered “no” to having used or tried to use ebooks available through RRU Library, the primary reason for not using the ebooks was that they did not know that the RRU Library had ebooks (see Table 3).

Table 3

Reasons For Not Using Library ebooks

<table>
<thead>
<tr>
<th>Why have you not used or not tried to use RRU Library ebooks? (Please select all that apply)</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I did not know the RRU Library had ebooks</td>
<td>40.2%</td>
<td>151</td>
</tr>
<tr>
<td>I prefer print books</td>
<td>29.8%</td>
<td>112</td>
</tr>
<tr>
<td>I don’t know how to find RRU Library ebooks</td>
<td>26.1%</td>
<td>98</td>
</tr>
<tr>
<td>I did not find any RRU Library ebooks on topics relevant to me</td>
<td>13.6%</td>
<td>51</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>24.7%</td>
<td>93</td>
</tr>
</tbody>
</table>

answered question 376

Similarly, in the 2003 survey, 37.3% (138/370) of student respondents gave the answer of “didn’t know about them” to the question of why they weren’t using ebooks (Croft & Bedi, 2005, p. 122). Interestingly, in the 2009 survey, 29.8% (112/376) of students noted that they prefer print books as a reason for not using ebooks, whereas in the 2003 survey, only 11.62% (43/370) expressed a similar preference (Croft & Bedi, 2005, p. 122). A significant number of students gave textual responses in answering “other” reasons for not using ebooks. The majority of the textual responses fall under three main themes. Many noted that they are at the beginning stages of their program and have not yet needed to perform significant research or have not yet had the time to investigate ebooks specifically. Others said that they generally only use journal articles for their research, citing ease of access as the main driver for doing so. The final significant group noted issues with reading on screen, which correlates with the 2003 survey, where “don’t like reading on screen” was cited by 11.89% (44/370) respondents as a reason for not using ebooks (Croft & Bedi, 2005, p. 122).
To discover what influence familiarity with library resources had on use of RRU Library ebooks, the answer to “how would you describe your level of familiarity with RRU Library resources and services?” was cross-tabulated with the answers to whether or not respondents had used RRU ebooks (see Table 4).

Table 4

**Familiarity with library resources and services**

<table>
<thead>
<tr>
<th>How would you describe your level of familiarity with RRU Library resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you used or tried to use the ebooks available through RRU Library?</td>
</tr>
<tr>
<td>Answer Options</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Not familiar</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Very familiar</td>
</tr>
<tr>
<td>Don't know</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The majority of respondents who assessed themselves as “familiar” or “very familiar” also answered “yes” to having used ebooks. Those who answered “no” to having used or tried to use RRU Library ebooks had a more dispersed range of familiarity while tending toward declaring themselves to be less familiar.

Of those who responded “no” to having used RRU ebooks, a cross-tabulation was also done between respondents’ self-declared familiarity with RRU Library resources and answering “I did not know the RRU Library had ebooks” as their reason for not using RRU Library ebooks (see Table 5).
Close to half of the respondents (43.0% (65/151)) declared themselves to be “familiar” or “very familiar” with RRU Library resources, despite also saying that they did not know that RRU Library had ebooks. Books and ebooks are specifically demonstrated during library instruction sessions at RRU to make sure that students are aware of monograph resources, which can sometimes be overlooked by students during their research. How to best promote monograph resources, both print and electronic, is a particularly challenging question within a distributed learning environment. RRU librarians have a potential advantage in that face-to-face library instruction is an integrated part of the programming, but that instruction often does not coincide with a point of need. RRU students often do not do much research during their initial residency periods, during which they focus on team development and an introduction to their area of study. Without the advantage of being able to immediately apply the new research skills that they learned during the research instruction sessions, there is a risk that these skills will not be retained. As part of the 2009 survey, questions were also asked about the importance of face-to-face library instruction and the availability of online instructional resources via the library website. When cross-tabulations were performed to discover if opinions regarding the availability of instructional help in different modes had any distinct relation to ebook use, no strong correlations were found. However, librarians working in a distributed learning environment might be interested to learn that the majority of respondents, 37.8% (285/753), responded that face-to-face library instruction was “very important” in helping them do research for their program, and 62% (467/753) responded that face-to-face library instruction was “important” or “very important”. Only 8.9% (67/753) responded that face-to-face library instruction was “not important”.

As previously mentioned, most RRU students attend at least one face-to-face library instruction session. The majority of survey respondents who answered “yes” to having used or tried to use RRU library ebooks (65.5% (261/383)), did remember being shown ebooks during an instructional session (see Table 6).

Table 5

Familiarity with Resources and Services versus Awareness of RRU Library ebooks

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Why have you not used or not tried to use RRU Library ebooks?</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*I did not know the RRU Library had ebooks</td>
<td>Count</td>
</tr>
<tr>
<td>Not familiar</td>
<td>33</td>
<td>17</td>
</tr>
<tr>
<td>Neutral</td>
<td>36</td>
<td>47</td>
</tr>
<tr>
<td>Very familiar</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>151</td>
</tr>
</tbody>
</table>

answered question 151
Unfortunately, due to an oversight in the 2009 survey, whether or not respondents remembered being shown ebooks during and instructional session was not asked of all respondents, but just of those who answered yes to having used ebooks. Respondents were also asked if they became aware of RRU Library ebooks as the result of a response to a reference question (see Table 7).

Table 7

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>19.8%</td>
<td>76</td>
</tr>
<tr>
<td>No</td>
<td>73.6%</td>
<td>282</td>
</tr>
<tr>
<td>Not sure</td>
<td>6.5%</td>
<td>25</td>
</tr>
</tbody>
</table>

Nearly 20% of respondents said that they found out about RRU Library ebooks through reference help from the library. As for the “other” ways that respondents described finding ebooks, many repeated that they had learned about them in instruction. Others said that they discovered them on their own during searches using resources on the library website. Another notable discovery method was the recommendation of peers or instructors. Respondents were also asked about the purposes for which they used RRU Library ebooks (see Table 8).
The majority of respondents, 86.9% (333/383), used the library’s ebooks for research assignments. A higher than anticipated number of respondents used RRU Library ebooks as required course readings. In the 2003 survey, the question “For what purpose did you use ebooks?” was also asked; student respondents in that survey also cited “research” as the main purpose of use (49.13% (142/289)) (Croft & Bedi, 2005, p. 126). In 2003, “Recommended/required reading” was cited as the purpose for using ebooks by 14.19% (41/289) of student respondents (p. 126). The 2009 data shows a significant increase in the use of ebooks as course readings, which may perhaps contribute to the overall increased use of ebooks. In comparison, in 2003, “pleasure/personal interest” was cited as the purpose by 13.84% (40/289) of student respondents (p. 126), which is very similar to the 12.3% (47/383) from 2009. The textual responses in “other” primarily repeated research as the purpose. One interesting comment from that text response field worth noting is:

I didn't use them....they were not worth the effort. I found other ways to use readable material. My opinion: ebooks as academic sources are not designed for reading. They are designed to frustrate copying. The next question is loaded. I rejected use of an RRU Library ebook because they frustrated reading, not enhanced it.

At the RRU Library tries, wherever possible, to maximize the diversity of its monographic collection by investing in only a single copy of any one book. If a book is available as an ebook in the library collection, RRU Library does not purchase a print version of the same book. The bundling of ebook collections by aggregators, however, sometimes means that ebook copies of print books are sometimes also available in the RRU Library collection. In terms of available formats in the use of ebooks, the 2009 results showed a fairly even split between that as a reason for use (see Table 9).

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>For a research assignment</td>
<td>86.9%</td>
<td>333</td>
</tr>
<tr>
<td>For pleasure or personal interest</td>
<td>12.3%</td>
<td>47</td>
</tr>
<tr>
<td>Required reading in a course</td>
<td>26.4%</td>
<td>101</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4.7%</td>
<td>18</td>
</tr>
</tbody>
</table>

answered question 383

In the 2003 survey, in response to the question, “did you have to use an ebook because that was the only available format?”, 45.98% (80/174) of student respondents said yes, and 54.02% (94/174) said no.
The number of respondents who responded “yes” to this question was almost identical in both 2003 and 2009.

In response to whether or not those who had used or tried to use RRU Library ebooks would have preferred a print version of the book instead, a 53.3% (204/383) majority of users responded “no” (see Table 10).

Table 10

Print Preference

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>29.8%</td>
<td>114</td>
</tr>
<tr>
<td>No</td>
<td>53.3%</td>
<td>204</td>
</tr>
<tr>
<td>Not sure</td>
<td>17.0%</td>
<td>65</td>
</tr>
</tbody>
</table>

Answered question 383

In 2003, 43.8% (80/174) student respondents said that they would have preferred the print version of the book, and 54.02% (94/174) said “no” (Croft & Bedi, 2005, p. 123). An almost identical number of student respondents said “no” to preferring a print version of the book over the ebook version in the 2003 survey (p. 123) as the 2009 survey. Anecdotally, RRU students occasionally request through interlibrary loan print versions of books that RRU Library has as ebooks. Statistics on the number of requests are not kept, and requests are filled.

Of particular interest to the authors of the survey were the responses as to the satisfaction of students with their experience using RRU Library ebooks. (see Table 11).

Table 11

Satisfaction with ebooks

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Not satisfied</th>
<th>Neutral</th>
<th>Very satisfied</th>
<th>Don't know</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please choose an option on the scale from &quot;Not satisfied&quot; to &quot;Very satisfied&quot;</td>
<td>18</td>
<td>75</td>
<td>137</td>
<td>3</td>
<td>383</td>
</tr>
</tbody>
</table>

Answered question 383

The majority of users, 68.7% (263/383), were either satisfied or very satisfied with their experience using RRU Library ebooks. Just under 20% (19.6% (75/383)) of respondents rated their satisfaction with their experience of using RRU Library ebooks as neutral, and 11.0% (42/383) respondents rated their satisfaction within degrees of “not satisfied”. In the 2003 survey, respondents were asked about their satisfaction with particular ebook platforms (Croft & Bedi, 2005, p. 123). Given the substantial number of different platforms within the RRU collection in 2009, the researchers did not pursue repeating a question along this line in 2009, and instead opted for a question regarding overall satisfaction.
Students were also asked about the adequacy of RRU Library’s ebooks collections for their program areas (see Table 12).

Table 12

Satisfaction with ebook Collection by Program

<table>
<thead>
<tr>
<th>What program are you in?</th>
<th>Was the RRU Library ebook collection adequate for your program subject areas?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>BA Justice Studies</td>
<td>6</td>
</tr>
<tr>
<td>BA Professional Comm.</td>
<td>16</td>
</tr>
<tr>
<td>BCentre Entrepreneurial Management</td>
<td>21</td>
</tr>
<tr>
<td>BS Environmental Science</td>
<td>7</td>
</tr>
<tr>
<td>BS Environmental Management</td>
<td>0</td>
</tr>
<tr>
<td>MA Conflict Analysis and Management</td>
<td>3</td>
</tr>
<tr>
<td>MA Disaster and Emergency Management</td>
<td>9</td>
</tr>
<tr>
<td>MA Environmental Ed and Communication</td>
<td>7</td>
</tr>
<tr>
<td>MA or MSc Environment and Management</td>
<td>3</td>
</tr>
<tr>
<td>MA Human Security and Peacebuilding</td>
<td>1</td>
</tr>
<tr>
<td>MA Interdisciplinary Studies</td>
<td>0</td>
</tr>
<tr>
<td>MA Leadership</td>
<td>36</td>
</tr>
<tr>
<td>MA Learning and Technology</td>
<td>4</td>
</tr>
<tr>
<td>MA Professional Comm.</td>
<td>11</td>
</tr>
<tr>
<td>(including specialization in IIC)</td>
<td></td>
</tr>
<tr>
<td>MBA Master of Business Administration</td>
<td>25</td>
</tr>
<tr>
<td>MSc Environment and Management</td>
<td>6</td>
</tr>
<tr>
<td>Tourism program (any of them)</td>
<td>5</td>
</tr>
<tr>
<td>Any certificate or diploma program with the Centre for Applied Leadership Management (CALM)</td>
<td>5</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>12</td>
</tr>
</tbody>
</table>

Generally, respondents were positive about the adequacy of the RRU Library ebooks collection in their program areas, with the notable standout of the graduate students in the Professional Communication program and the Conflict Analysis and Management program. In the 2003 survey, student respondents also generally indicated that the ebook collections in their program areas were adequate, with notable standouts then also being the graduate students in Conflict Analysis and Management, and the Master of Business Administration (MBA) students at the time were evenly split on whether or not the ebook collection was adequate in their area (Croft & Bedi, 2005, p. 127).
Different ebook platforms offer different levels of functionality, and respondents were asked about the importance of specific features to them (see Table 13).

Table 13

_Important ebook Features_

<table>
<thead>
<tr>
<th>Feature</th>
<th>Not important</th>
<th>Somewhat important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very important</th>
<th>Don’t know</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to email text</td>
<td>26</td>
<td>34</td>
<td>73</td>
<td>109</td>
<td>128</td>
<td>8</td>
<td>378</td>
</tr>
<tr>
<td>Anytime access</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>63</td>
<td>300</td>
<td>4</td>
<td>378</td>
</tr>
<tr>
<td>Automatic citations</td>
<td>11</td>
<td>14</td>
<td>48</td>
<td>92</td>
<td>213</td>
<td>4</td>
<td>382</td>
</tr>
<tr>
<td>Copying and pasting</td>
<td>7</td>
<td>14</td>
<td>28</td>
<td>98</td>
<td>226</td>
<td>6</td>
<td>379</td>
</tr>
<tr>
<td>Downloadable to a computer for offline use</td>
<td>7</td>
<td>3</td>
<td>15</td>
<td>86</td>
<td>261</td>
<td>8</td>
<td>380</td>
</tr>
<tr>
<td>Downloadable to a smart phone or hand-held device</td>
<td>145</td>
<td>45</td>
<td>91</td>
<td>48</td>
<td>39</td>
<td>9</td>
<td>377</td>
</tr>
<tr>
<td>Highlighting</td>
<td>21</td>
<td>30</td>
<td>74</td>
<td>107</td>
<td>141</td>
<td>7</td>
<td>380</td>
</tr>
<tr>
<td>Printing</td>
<td>21</td>
<td>24</td>
<td>50</td>
<td>102</td>
<td>175</td>
<td>2</td>
<td>374</td>
</tr>
<tr>
<td>Searching</td>
<td>4</td>
<td>6</td>
<td>11</td>
<td>92</td>
<td>260</td>
<td>6</td>
<td>379</td>
</tr>
</tbody>
</table>

Are there other features that you find very important or somewhat important? 41 answered question 383

The feature rated very important more times than any other was “anytime access”, with 79.4% (300/383) of respondents considering that feature “very important”. The two next most highly rated features were “downloadable to a computer for offline use”, with 68.7% (261/383) of respondents rating that feature as “very important”, and “searching” rated highly at 68.6% (260/383). All the listed features were most often considered very important by the respondents, with one notable and interesting exception: “downloadable to a smart phone or hand-held device” was considered “not important” by a 37.9% (145/383) majority of respondents. The textual responses made regarding other “important” or “somewhat important” features fall into a few main categories. Comments about Mac compatibility were notable, as were comments about having page numbers for effective referencing. Students also mentioned good navigability, and they often contrasted this feature against existing limitations in some of the ebook interfaces. The ability to make notes also stood out as a comment, and there were frequent comments about the slow loading speed of some of the ebook content, especially for those located in areas with slow connectivity.

Investigation of students’ interest in mobile technology, specifically as it pertains to ebooks, was of great interest to us. Mobile learning and services to support it are under development at RRU, and the Library is interested in contributing to these services. In response to the question, “have you ever used ebooks on a hand-held device like an iPhone® or Blackberry®?”, 87.2% (675/774) respondents said “no” (see Table 14).
Investigators also asked what kind of mobile devices respondents use (see Table 15).

Table 15

Devices Used by Students

Do you use any of the following devices? Please select all that apply

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless-enabled laptop</td>
<td>91.1%</td>
<td>686</td>
</tr>
<tr>
<td>PDA</td>
<td>9.8%</td>
<td>74</td>
</tr>
<tr>
<td>iPhone®</td>
<td>13.5%</td>
<td>102</td>
</tr>
<tr>
<td>Blackberry®</td>
<td>36.4%</td>
<td>274</td>
</tr>
<tr>
<td>Palm®Pre™</td>
<td>1.1%</td>
<td>8</td>
</tr>
<tr>
<td>Windows® mobile smartphone</td>
<td>4.0%</td>
<td>30</td>
</tr>
<tr>
<td>Ebook specific reader such as a Kindle™ or Sony® Reader</td>
<td>1.6%</td>
<td>12</td>
</tr>
<tr>
<td>None</td>
<td>5.0%</td>
<td>38</td>
</tr>
<tr>
<td>Other devices (please specify)</td>
<td>5.0%</td>
<td>38</td>
</tr>
</tbody>
</table>

answered question 753

Not surprisingly for students studying in a distributed learning environment, a substantial number of respondents — 91.1% (686/753) — use a wireless-enabled laptop. A significant number of student respondents, 36.4% (274/753), also reported owning a Blackberry® Smartphone. There are a couple of possible explanations worth noting that contribute to the high number of Blackberry® users at RRU. RRU draws a large number of its students from the provincial government sector, and Blackberries® are generally standard issue for British Columbia (BC) government employee executives. Also, until recently, the handheld device market in BC has been quite restrictive, both in terms of number of carriers as well as devices supported. In the category of other for the above question, the devices that were notably mentioned were iPods and other brands and types of smartphones.

When the respondents were asked how important access to RRU learning resources and services via hand-held devices was to them, the majority of respondents, 42.9% (323/753), said “not important” to varying degrees (see Table 16).
Table 16

Importance of Access to Learning Resources and Services via Hand-held Devices

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Not important</th>
<th>Neutral</th>
<th>Very important</th>
<th>Don't know</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please choose an option on the scale from &quot;Not important&quot; to &quot;Very important&quot;</td>
<td>258</td>
<td>65</td>
<td>218</td>
<td>111</td>
<td>75</td>
</tr>
</tbody>
</table>

However, 24.7% (186/753) respondents answered “important” or “very important”, and 29.0% (218/753) responded “neutral” to the question, so the majority of respondents were either positive or undecided on the importance of learning services via hand-held devices. Responses to this question were broken down further by program (see Table 17).
Table 17

Importance of Access to Learning Resources and Services via Hand-held Devices by Program

What program are you in?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Not important</th>
<th>Neutral</th>
<th>Very important</th>
<th>Don’t know</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA Justice Studies</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>BA Professional Communication</td>
<td>15</td>
<td>2</td>
<td>27</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>BComm Entrepreneurial Management</td>
<td>30</td>
<td>6</td>
<td>26</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>BSc Environmental Science</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>BSc Environmental Management</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>MA Conflict Analysis and Management</td>
<td>12</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>MA Disaster and Emergency Management</td>
<td>8</td>
<td>1</td>
<td>13</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>MA Environmental Education and Communication</td>
<td>11</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>MA or MSc Environment and Management</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>MA Human Security and Peacebuilding</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MA Interdisciplinary Studies</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MA Leadership</td>
<td>55</td>
<td>15</td>
<td>37</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>MA Learning and Technology</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>MA Professional Communication (including specialization in IIC)</td>
<td>26</td>
<td>6</td>
<td>23</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>MBA Master of Business Administration</td>
<td>27</td>
<td>7</td>
<td>35</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>MSc Environment and Management</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Tourism program (any of them)</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Any certificate or diploma program with the Centre for Applied Leadership Management (CALM)</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>26</td>
<td>4</td>
<td>18</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Answered question: 753

Dispersal of interest by program in the delivery of university services and resources via hand-held devices indicates that the highest number of respondents who answered “very important” are from the MBA program, and third highest are from the Bachelor of Commerce program. As pilots for such services are developed, it is informative to know where to target efforts to take advantage of student enthusiasm to participate. An interesting cross-tabulation of the questions regarding devices and ebooks was also made (see Table 18).
Table 18

Use of ebooks on Hand-held Devices versus Type of Device

Do you use any of the following devices? Please select all that apply

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Yes</th>
<th>No</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless-enabled laptop</td>
<td>95</td>
<td>591</td>
<td>91.1%</td>
<td>686</td>
</tr>
<tr>
<td>PDA</td>
<td>20</td>
<td>54</td>
<td>9.8%</td>
<td>74</td>
</tr>
<tr>
<td>iPhone®</td>
<td>38</td>
<td>64</td>
<td>13.5%</td>
<td>102</td>
</tr>
<tr>
<td>BlackBerry®</td>
<td>45</td>
<td>229</td>
<td>36.4%</td>
<td>274</td>
</tr>
<tr>
<td>Palm®Pre</td>
<td>0</td>
<td>8</td>
<td>1.1%</td>
<td>8</td>
</tr>
<tr>
<td>Windows® mobile smartphone</td>
<td>9</td>
<td>21</td>
<td>4.0%</td>
<td>30</td>
</tr>
<tr>
<td>Ebook specific reader such as a Kindle or Sony® Reader</td>
<td>5</td>
<td>7</td>
<td>1.6%</td>
<td>12</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>37</td>
<td>5.0%</td>
<td>38</td>
</tr>
<tr>
<td>Other devices (please specify)</td>
<td>13</td>
<td>25</td>
<td>5.0%</td>
<td>38</td>
</tr>
</tbody>
</table>

answered question 753

Of the respondents who answered yes to having used ebooks on a hand-held device, 20.4% (20/98) use PDAs, 38.8% (38/98) use iPhones®, 45.9% (45/98) use a BlackBerry®, 9.2% (9/98) use Windows® mobile smartphones, and 5.1% (5/98) use ebook readers. While the survey did not ask specifically which hand-held device respondents had used to read ebooks, the cross-tabulation is nonetheless interesting.

Overall, the increase in the proportion of students using ebooks between the 2003 study to the 2009 study was encouraging to the further investment in ebook resources by RRU Library. The data regarding the importance of specific features of ebooks will also help to guide choices in that ongoing investment. Very unfortunately, the summary comments field that was intended to be part of this survey was inadvertently left out. Valuable and illustrative qualitative feedback similar to the 2003 survey is, therefore, almost entirely missing from the survey results.

Conclusion

To summarize the findings:

- The proportion of students using RRU Library ebooks has gone up since the 2003 survey, though only just above half of students are using RRU Library ebooks.
- An almost identical number of student respondents (approximately 54%) said “no” to preferring a print version of the book over the ebook version of the book in both the 2003 and 2009 surveys.
- Responses to questions regarding ebooks and hand-held devices were mixed. The majority of students rated the ability to download an ebook to a hand-held device as not important, and that was the only ebook feature in a list of features to be rated by the majority as other than very important. The majority of students also responded that access to learning resources and services via a hand-held device ranked in varying degrees of not important. However, taken together, those who rated the importance of such access as either neutral or important to
varying degree outweighed those who rated it as not important. Also notable was the significant proportion of respondents who owned hand-held devices.

- There has been a notable increase in the use of ebooks for course readings from 2003 to 2009.
- A lack of awareness of RRU Library ebooks remains the top reason cited by students for not using them.

Overall, the survey received a very good response rate and has provided the RRU librarians with a variety of excellent feedback that can be used in both collection and service development. More RRU students are using ebook than ever before, however, effective promotion of ebooks will continue to be a challenge. The desire for ebook access specifically and learning resource and service access generally via hand-held devices by students is not overwhelming, but many students do have the devices and a majority were positive or neutral about such access. RRU Librarians have received valuable feedback regarding which students might show the greatest enthusiasm for pilot projects in mobile delivery of services and resources.
References


Appendix

RRU Library ebook survey

1. Welcome!

Our names are Rosie Croft, RRU University Librarian and Corey Davis, RRU Technical Services Librarian and this research project is E-book usage in a distributed learning academic library. Our credentials with Royal Roads University can be established by telephoning Steve Grundy, CIO and AVP at Royal Roads University 250.391.2606.

The primary research will consist of this survey and is foreseen to take 5 - 15 minutes to complete. The questions will refer to your use habits and opinion of ebooks at RRU Library. You can submit your name and contact information at the end of the survey to be entered to win a Sony ebook reader. This personal information will not be used to identify your responses and submitting this information is optional.

The research findings will be shared with RRU administration and will form the basis of a presentation at the 2010 Off-Campus Library Services Conference and made publicly available as a paper published in the Journal of Library Administration.

The information you provide will be summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual unless your specific agreement has been obtained beforehand. All documentation will be kept strictly confidential. In the event that your survey response is processed and stored in the United States, you are advised that its governments, courts, or law enforcement and regulatory agencies may be able to obtain disclosure of the data through the laws of the United States.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Similarly, if you choose not to participate in this research project, this information will also be maintained in confidence. Be aware that when you click the Done button your data cannot be individually identifiable.

Your completion of this survey will constitute your informed consent.

2. Tell us about yourself

1. What program are you in?

- Any certificate or diploma program with the
- Centre for Applied Leadership Management (CALM)
- BA Justice Studies
- BA Professional Communication
- BComm Entrepreneurial Management
- BSc Environmental Management
- BSc Environmental Science
- MA Conflict Analysis and Management
- MA Disaster and Emergency Management
- MA Environmental Education and Communication
- MA Human Security and Peacebuilding
- MA Interdisciplinary Studies
- MA Leadership
- MA Learning and Technology
- MA or MSc Environment and Management
- MA Professional Communication (including specialization in IIC)
2. How would you describe your level of familiarity with RRU Library resources and services? Please choose an option on the scale from "Not familiar" to "Very familiar" (using a scale of 1 to 5, in addition to 'Don’t know')

- Not familiar
- Neutral
- Very familiar
- Don’t know

3. Tell us about your experience with ebooks

For the purpose of this survey, ebooks (or electronic books) are defined as the digital media equivalent of a conventional printed book.

1. Have you ever used ebooks of any kind (e.g. through a public or academic library, via Google books or other websites, etc.)?

- Yes
- No

2. Have you ever used ebooks on a hand-held device like an iPhone or Blackberry?

- Yes
- No

3. Have you used or tried to use the ebooks available through RRU Library?

- Yes
- No

4. Tell us why you have not used or tried to use RRU Library ebooks

1. Why have you not used or tried to use RRU Library ebooks? (Please select all that apply)

- I did not find any RRU Library ebooks on topics relevant to me
- I did not know the RRU Library had ebooks
- I don’t know how to find RRU Library ebooks
- I prefer print books
- Other (please specify)

5. Tell us about your experience with RRU Library ebooks

1. When was the last time that you used or tried to use an RRU Library ebook?

- About a week ago
- About a month ago
- About a year ago
- Can’t remember

2. Were you shown RRU Library ebooks during a library research instruction session?
3. Did you find out about RRU Library ebooks through contacting the library with a reference or research question?

- Yes
- No
- Not sure

4. Why did you use RRU Library ebooks? Please select all that apply

- Did you find out about RRU Library ebooks in any other another way? If so, please describe
- For a research assignment
- For pleasure or personal interest
- Required reading in a course
- Other (please specify)

5. Did you use an RRU Library ebook because that was the only available format?

- Yes
- No
- Not sure

6. Would you have preferred a print version of the ebook?

- Yes
- No
- Not sure

7. How satisfied were you with your experience of using RRU Library ebooks? Please choose an option on the scale from "Not familiar" to "Very familiar" (using a scale of 1 to 5, in addition to ‘Don’t know’)

- Not satisfied
- Neutral
- Very satisfied
- Don’t know

8. Was the RRU Library ebook collection adequate for your program subject areas?

- Yes
- No
- Not sure

9. How important to you are the following ebook features. Please choose an option on the scale from "Not important" to "Very important" (using a scale of 1 to 5, in addition to ‘Don’t know’)

- Not important
- Neutral
- Very important
- Don’t know
- Ability to email text
- Anytime access
- Highlighting
• Printing
• Downloadable to a computer for offline use
• Automatic citations
• Downloadable to a smart phone or hand-held device
• Searching
• Copying and pasting
• Are there other features that you find very important or somewhat important?

6. Tell us about what is important to you

1. How important is face-to-face library instruction or training in helping you do research for your program? Please choose an option on the scale from "Not important" to "Very important" (using a scale of 1 to 5, in addition to ‘Don’t know’)
   • Not important
   • Neutral
   • Very important
   • Don’t know

2. How important are online library instructional or training materials in helping you do research for your program? Please choose an option on the scale from "Not important" to "Very important" (using a scale of 1 to 5, in addition to ‘Don’t know’)
   • Not important
   • Neutral
   • Very important
   • Don’t know

3. Do you use any of the following devices? Please select all that apply
   • Wireless-enabled laptop
   • PDA
   • iPhone
   • Blackberry
   • PalmPre
   • Windows mobile smartphone
   • Ebook specific reader such as a Kindle or Sony Reader
   • None
   • Other devices (please specify)

8. Access on the go

1. How important to you is access to RRU learning resources and services via a hand-held device like and iPhone or Blackberry? Please choose an option on the scale from "Not important" to "Very important" (using a scale of 1 to 5, in addition to ‘Don’t know’)
   • Not important
   • Neutral
   • Very important
   • Don’t know

7. Enter to win a great prize!

1. To be entered to win a $200 Future Shop gift certificate, please enter your name and email below. This information will not be used to personally identify your survey responses.
8. Thank you for taking our survey!

Thanks you for taking our survey. Your responses will help us improve RRU Library resources and services for all students!
Cloud Collaboration: Using Microsoft SharePoint as a Tool to Enhance Access Services

Jennifer Diffin
Fanuel Chirombo
Dennis Nangle
University of Maryland University College

Abstract
Proper knowledge base access and document storage has long been an issue for the Document Management Team (Access Services) at Information and Library Services of University of Maryland University College. Team members researched SharePoint and decided it could be exploited as a combination of intranet and cloud computing technologies. SharePoint’s features allow it to be a one-stop location to manage information in a secure, efficient, remotely accessible, and consolidated manner. The Team could then reduce redundancy and knowledge gaps by using the collaboration and communication features. This paper will discuss the steps the Team took to transition several previous avenues of document storage and knowledge base access into SharePoint, specifically in the case of creating a troubleshooting wiki for remote circulation locations.

Introduction
Remote access to information, knowledge sharing, and communication plays a pivotal role in distance education. The growing popularity of cloud computing combined with intranet technology has made achieving this much easier. The University of Maryland University College (UMUC) has chosen Microsoft’s SharePoint product as an internal information sharing solution that combines the best features of both intranets and cloud computing, such as security, ease of use, and remote accessibility. This article will focus specifically on facilitating internal staff communication and collaboration across remote locations by using SharePoint as an intranet and cloud computing solution.

Background
The University of Maryland University College has a strong history of distance education. UMUC was founded in 1947 “to provide off-campus, evening, and weekend courses for adult, part-time students throughout the state” (Hudgins, 2000, p. 1). Within a decade it was offering classes at military installations around the world. UMUC currently has a worldwide headcount of over 86,000 students in over 20 countries (University of Maryland University College, Office of Institutional Planning, Accountability and Research, 2009). Information and Library Services (ILS), formed in the early 1990s, works diligently to support faculty, students, and staff in their research needs.

Although UMUC has worldwide office locations, the library is currently located in Maryland. In the past, there were satellite libraries in Germany and Japan. The library support for these locations is now remotely handled by ILS. Within the State of Maryland, ILS has three remote circulation pick-up and return locations. Although they are all physically located in the same state and time zone, communication and training was historically uneven and unreliable.

ILS’ Document Management Team (Access Services - Circulation and Interlibrary Loan) struggled with the best way to handle training and documentation for these remote circulation points over the years, as well as their own internal documentation and communication. Since library circulation is not the main responsibility of the non-library staff at these remote circulation points, it is extremely important to keep all documentation current and accurate, and to maintain open communication to answer questions and provide additional training as needed. There is also a need to keep this knowledge current at the main library location and to streamline the workflow through efficient communication and collaboration. An
early attempt at documentation was three-ring binders. These were difficult to keep current as each binder had to be manually updated across all locations when procedures changed. Then, a staff member attempted to create an online circulation manual that pointed to material on a shared network drive. While this was a step forward in centralizing and digitizing the documentation, it never got off the ground due to security issues. Next a standalone wiki was created. This seemed promising as it was easy to access from the remote locations and it was easy to update. Documentation only needed to be updated in one location, and was then accessible by all who needed to use it. Yet, the wiki was located on a local computer that was not backed up on a regular basis. The staff constantly worried about the computer crashing and losing everything in the wiki. Also, while the wiki was a great place for documentation and procedures, it did not really allow for staff collaboration and communication.

Intranets: A Brief Definition

Of the Document Management Team’s previous information sharing solutions, the online circulation manual could be most likened to an intranet-based solution. An intranet is a private network belonging to an organization accessible only by the organization’s members, employees, or others with authorization. Similar to the Internet, an intranet’s Web site looks and acts just like any other Web site, but the username-and-password authentication surrounding an intranet fends off unauthorized access. Bottazzo (2005) defines the intranet as “…part of the organizational internal information system, dedicated to the support of group work and mastering of the organizational knowledge” (p. 79). Gunjal (2004) identifies central information storage and effective communication flows in organizations as some of the important attributes of intranets. Within libraries, Gunjal singles out the facilitation of information sharing as the primary benefit of an intranet as “it helps in dissemination of stored information as well as allows to access remote information” (p. 9). For example, any paper documents can be converted into HTML and made Web-accessible on an intranet. Such documents can range from staff training manuals, policies, schedules, procedures, to calendars of events (Gunjal, 2009).

Weiner (1999) divides intranet functions at a university into three categories. These are administrative, academic and general. The administrative functions are concerned with finance, human resources, records management and course scheduling. The academic functions refer to research, coursework, publishing and course administration. General refers to communication and public relations. This can range from calendars of events that display the programs and activities of the organization to a vast range of internal organizational information that may include employee lists, telephone and office number lists and geographic locations of departments.

Building on Weiner (1999) and Natarajan (2008) provides a list of some of the key benefits of an intranet: (1) employees can share information and documents; (2) any authorized staff member can easily update documents; (3) teams can save time through online discussions instead of holding physical meetings; and (4) organizations can access their vital information easily and quickly. The shared access provides a platform where documents are saved in a standard form at a specific location where every employee can easily access a specific document. The intranet’s bulletin or discussion board is an important outlet that allows employees to express their opinions and ideas. Employees can make use of a calendar of events on the intranet to arrange meetings and book other appointments. Gunjal (2004) conclusively asserts that “intranets are relatively cheap and easy to develop because they use the existing technology of the internet” (p. 14).

As much as intranets have emerged as an effective paradigm for information sharing, the UMUC intranet is set up as more of a one-way communication tool. In order to update or add information to the intranet, one must submit a request to the UMUC department that is responsible for its maintenance. Due to this delayed and inefficient method, the UMUC intranet could not serve as a proper consolidated space for multi-user collaboration. The University’s departments primarily use the intranet as a way to promote their department to the rest of the university; the intranet is not used in the ways Natarajan and Gunjal suggest above. As a result, the Document Management Team attempted to create an intranet of their own: an online circulation manual that was web-based, and linked to pages on the shared network drive. This approach was effective for those whose offices were at UMUC’s stateside headquarters, since they had access to this shared network drive. However, remote circulation staff was unable to view the manual, which essentially
forced the Team to start at square one with their knowledge base. Also, due to the fact that the online circulation manual links to an internal drive, the IT department deemed it unsafe for remote access. The fact that the UMUC intranet was not set up as a document repository necessitated the Document Management Team to consider cloud computing as an optional knowledge base and information sharing system.

**Cloud Computing: A Brief Background**

The term cloud computing, while certainly prevalent in today’s technological discussions, came into prominence in 2006 when Google CEO Eric Schmidt started referencing the term in popular discussions (Nelson, 2009). Certainly, the term (and concept) has skyrocketed in popularity since then. However, a definition of cloud computing reflects the metaphor applied to the concept itself: anomalous and difficult to pin down. Venkatraman (2009) offers an appropriate definition of cloud computing: “In cloud computing…the software resides on an Internet server run by or on behalf of the software supplier, and users get to access the features of those applications via the Internet” (p. 16). Gunderloy (2008) defines cloud computing more simply, comparing the difference between traditional and cloud computing to the difference between retrieving money stored under the mattress or at an ATM:

> My attitude towards online information… was pretty close to taking my paycheck in cash, and stuffing it under the mattress because I didn’t trust a bank to hold it for me… Now we can treat the Web much more like a bank with a network of ATMs: it’s a secure repository with a network of points where you can withdraw your information on demand (p. 1).

A brief scan of recent library literature shows that cloud computing is lucrative for libraries of all kinds. Most libraries’ motivations for moving into the cloud are cost effectiveness and efficiency. Collier, the Director of Archive and Compliance Solutions at Hitachi Data Systems, further explains the cost-effectiveness of the cloud: “A key prerequisite to cloud computing is to pinpoint where maximum savings can be made based on a realistic and accurate understanding of the content” (Venkatraman, 2009, p. 17). Pace (2009), Executive Director for Networked Library Services at OCLC, emphasizes that the key benefit to cloud computing for libraries is to free up the librarians’ time to allow for innovation:

> Despite a surge of online content being available to patrons, libraries will continue back-office operations for all types of materials. The more these workflows are industrialized and served by network-level applications, the more time and effort libraries can assign to other intellectual endeavors (p. 649).

While there is plenty of documentation to prove the effectiveness of cloud computing, there are several concerns surrounding the adoption of this new technology. Paramount to all other concerns is the issue of security. John Sheridan, head of e-services at the National Archives, explains: “While there is an exciting possibility and inevitability of the cloud model for the information community, concerns of portability, security, and privacy remain unsolved” (Venkatraman, 2009, p. 17). It would appear that cloud computing’s greatest strength - ease of use and access - is also its greatest potential downfall. Another issue that commonly plagues cloud computing software is ownership (or lack thereof). Hastings (2009) warns:

> Data ownership is an issue any library must consider before making the decision to upload to a public server. Sensitive information like budget data, internal memos, or documents concerning major organizational decisions should never be uploaded to a public server (p. 12).

These two concerns cause many libraries to look at cloud computing as more of a recreational platform to reach out to patrons, and not a reliable location for sensitive internal data.

The Document Management Team saw the problems inherent in both intranets and cloud computing, but realized that the valuable functions of the technology were difficult to ignore. Intranets, while touting security, are frequently inaccessible to those outside of an organization’s range of IP addresses and its firewall. Cloud computing, on the other hand, is efficient and easy to access from any location, but is laden with security issues. With these concerns in mind, the Document Management Team
was initially hesitant to migrate their information into SharePoint. However, after much research and trial testing, the Team realized that an effective approach to the SharePoint application could result in the creation of a "cloud intranet" -- an online environment that takes advantage of intranets and cloud computing’s strengths, while circumventing their inherent weaknesses. SharePoint became a consolidated storehouse of the Team’s information and knowledge base, all while maintaining a high level of security. The UMUC library’s recent move to a new physical location illustrates how effective the Document Management Team’s SharePoint site was as a functioning cloud intranet.

**Move to SharePoint**

ILS began investigating Microsoft SharePoint in 2008 while it was being piloted by the IT Department at UMUC. It quickly became clear to the Document Management Team that this could be what they were looking for in terms of bringing documentation, communication, and collaboration together in one place. Although having a “free,” institutionally supported program to use was a factor in the decision to use SharePoint, the product’s features and limitations were carefully considered before the Team decided to move forward. In the context that the Team is using SharePoint, it can be defined as both an intranet and cloud computing, or even cloud collaboration: “… unlike a simple intranet or collaboration solution, SharePoint also includes portal, Web content management and business intelligence capabilities” (Koplowitz & Owens, 2009, p.8). Although the Team had made progress over the past several years by moving from print binders to an online circulation manual to a wiki, nothing up to this point worked as a truly collaborative space. After some initial interest in SharePoint, several factors slowed down the migration process.

One reason for the slow start to the migration project was the turnover of several staff in the Document Management Team. This change in staffing was just one more indication that using SharePoint was a good idea, “The SharePoint approach helps limit the liability of concentrating knowledge in one person and minimizes the effects of attrition” (Fox & Deutsch, 2000, Background section, para. 1). Having a primarily new Team was a great opportunity to switch the knowledge base to SharePoint and spread the knowledge around the Team as much as possible.

When the project did start taking shape, there was a conscious decision to not simply repeat what had been done before. The Team implemented best practices for the wiki so it would have a homogenous look and feel even though several different people were working on it. Initially, the Team simply moved documents from the messy, outdated shared network drive to the SharePoint document library. They then realized an opportunity to step back and rethink the hierarchy and structure of the information. As Koplowitz & Owens (2009) noted, “Just because the tools exist doesn’t mean the structure will build itself. Careful planning is required, and plans will need to adapt as new lessons are learned. Don’t take lightly the opportunity a blank slate offers” (p.22). Many documents became wiki pages instead of storing them in the SharePoint document library based on this thoughtful restructuring of the information. In addition to asserting that libraries can use an intranet to access remote information, Gunjal (2004) states:

> With increasing emphasis on resource sharing not only between libraries but between different branches and departments of a library, the intranet offers the potential to be a very important tool in libraries’ effort to make the most efficient use of their resources (p.10).

The Document Management Team saw this potential in SharePoint and decided it would work very well for documentation and training at the remote circulation locations. Consequently, the next step in the migration to SharePoint involved setting up a site for the remote circulation points to use when needing to refer to policies, procedures, and documentation. This would replace the haphazard method of documentation these remote sites were currently using. The project was further spurred on by the need to train and provide documentation for the people staffing a new remote circulation location.

**SharePoint Wiki for Remote Circulation Locations**

In preparation for ILS’ move to the new UMUC Academic Center at Largo, Maryland, the Document Management Team worked with UMUC’s Office of Enrollment Management (OEM), which
staffs the Information Desk at the library’s previous location, to provide a circulation point and train them on relevant policies and procedures. On September 3, 2009, the Associate Provost for ILS, Assistant Director for Systems and Access Services, and the Document Management Librarian met with OEM management to discuss the feasibility of the Information Desk becoming a remote circulation location. It was decided that OEM staff should be trained and given an opportunity to pilot being a circulation point while ILS was still in the same building. On September 14, 2009, the Document Management Librarian met with the Assistant Director of the Information Desk to demonstrate SharePoint as an informational and collaborative tool that could be used as a knowledge base for staff to refer to when they had circulation questions. The Assistant Director was very interested in using SharePoint and expressed an interest in also using it for his own team. The Document Management Librarian and Library Associate trained all of the OEM staff who work at the Information Desk on November 3-5, 2009. By November 17, 2009, the SharePoint wiki for the Information Desk was in its final form and location. Although this was specifically created as a result of this Information Desk becoming a circulation point, it was also intended for it to be used by the other remote circulation points. All of the remote circulation locations are now using the SharePoint wiki. The Information Desk officially became a remote circulation location on November 18, 2009.

The main SharePoint feature used for the new remote circulation documentation was a wiki. Although the Team had already been using a standalone wiki for documenting procedures, it was one of several places to look for this information and one was never sure what was current or accurate. The standalone wiki was also never backed up and the computer it resided on could crash or disappear at any time. Moving the wiki and all other documentation into SharePoint allowed for consolidation of information, all users know where to look for information, and can trust that it is the most recent version. Also, SharePoint is on a secure server that is backed up daily, so there is no fear of data loss.

The SharePoint wiki is easy to create and maintain using a WYSIWYG (What You See Is What You Get) editor. The Document Management Library Associate created the content for the wiki for the Information Desk and other remote circulation locations in November 2009. A student worker put the content into the wiki using the best practices guide, which was created as a SharePoint wiki page. The remote circulation wiki includes step-by-step directions for circulation functions and a troubleshooting section. It also includes a staff list of the Document Management Team including pictures. This was especially helpful during the training and transition phase. It helped the Information Desk staff become familiar with the Team and to know who everyone was when a member of the Team dropped off and picked up books at the Desk during the transition. The three training sessions during the first week of November 2009 for the Information Desk Staff were face-to-face. After a couple of attempts to find the appropriate “home” for this wiki within the Document Management SharePoint site, the wiki was given its own site called “OEM & MD Ops.” Office of Enrollment Management (OEM) and Maryland Operations (MD Ops) are the departments that staff the remote circulation points. Since SharePoint 2007 “organizes information as [W]eb sites” (Pyles et al., 2007, p. 79), it was easy to point OEM and MD Ops to their wiki via a simple, meaningful URL. In fact, “a site in SharePoint is the same as any [W]eb site you have ever accessed: a collection of [W]eb pages interrelated to allow a group or organization to share information, organize data, and conduct collaborative meetings and discussions” (Pyles et al., 2007, p. 79).

SharePoint as a Comprehensive Cloud Intranet

While the above scenario illustrates how effective SharePoint is as a consolidated knowledge base, UMUC’s Document Management Team employs several other functions of SharePoint to build a complete cloud intranet that is both secure and easy to access. In the aforementioned example, the Team created an abbreviated version of the Document Management wiki to aid the remote circulation points. However, the Team has created a comprehensive wiki to use for more complex issues that extend beyond circulation-related responsibilities, such as interlibrary loan and statistics tracking. Instead of instructional documents housed in binders or hastily stored on a network drive, the Document Management Team has one remote location for information that can be easily updated. Once a user makes changes to a particular wiki page, relevant Team members are notified by e-mail. Unlike previous knowledge base systems, the SharePoint wiki allows Team members to have instant and accurate access to policies and procedures amid rapid and miniscule changes.
The Document Management Team also takes advantage of SharePoint’s document library feature to be a secure, accessible alternative to their previous document storage system, which was a shared network drive. After implementing a simple set of naming conventions, the Team now saves all of their documents directly to document library. The Team utilizes SharePoint’s version history feature to foster worry-free collaboration; if one Team member makes incorrect adjustments to a document, they can always revert back to the correct version. Leaving comments that explain each new version also increases efficiency. Some Team members have elected to map their document library’s drive to their PCs; by doing so, they are able to access and navigate the documents that are hosted on SharePoint through their “My Network Places” interface on their PC. This added function allows the team to quickly save and open documents in a familiar, easy-to-use interface without ever needing to use a Web browser.

A third feature that the Team uses is the calendar function. While the features of the SharePoint calendar are not necessarily revolutionary, the fact that all of the Team’s schedules/duties can be accessed from any remote location reduces the “guessing game” aspect of a Team member’s daily schedule. The Document Management Team is diverse, consisting of two librarians, one library associate, and three technicians. Each member of the Team has a fluctuating schedule that must be regularly adjusted to accommodate time off, sometimes on a last-minute basis. By recording time off/schedule changes through SharePoint, Team members are not only able to make the changes when out of the office, but their fellow Team members are also immediately notified of these changes by e-mail, which allows them to adjust their own responsibilities accordingly to compensate for the absence. In addition to recording time off, the three Document Management Technicians created a second calendar in SharePoint that lists their specific responsibilities. This feature is not only valuable within the Team, but external library staff members (especially the Reference Team) can use this calendar to know which technician to refer patrons to regarding specific Document Management issues.

The three features mentioned above are the main elements the Team employs in their SharePoint site. However, there are several minor features that, when used as a part of the greater context of the site, facilitate a complete intranet on a cloud. The site’s customizable homepage allows the Team to quickly view abbreviated displays of calendars and lists of important documents or links. The Team also posts brief reminders and announcements. These quick blurbs were previously sent to the Team via e-mail and would often get misfiled or deleted to free inbox space. There is also a section of the homepage that allows HTML code, which features a Twitter widget that displays OCLC’s most recent “tweets.” This addition, while largely cosmetic, instantly clues the Team members in on useful articles and interesting updates in the library profession. After migrating the information and deliberately structuring it, the Team’s SharePoint site has been their consolidated location for information storage and knowledge transfer.

Conclusion

The Document Management Team’s implementation of their own cloud intranet via SharePoint is constantly evolving in approach and purpose, which is one of the benefits of storing and arranging information in a cloud. However, several components of the technology remain reassuringly concrete: the convenience of access and the security of a reliable, safe server. Hastings and Sheridan’s privacy concerns surrounding cloud computing are put to rest, and Gunjal’s praise for an intranet’s administrative efficiency are also realized.

After witnessing the Document Management Team’s success with SharePoint, the drive to create a cloud intranet of their own has spread to other library departments, such as Electronic Reserves and Systems. SharePoint’s “blank slate” nature has allowed each department to arrange their administrative information according to their specific needs. While the Document Management Team has illustrated the principles of a cloud intranet by using Microsoft SharePoint, this particular application is not the only means by which a library could create a cloud intranet of their own. SharePoint merely brings to light the need for libraries to extract the benefits of both intranets and cloud computing without sacrificing the key concerns of accessibility and security. Adopting a cloud intranet model can enable libraries of all kinds to allow technology to work for them, increasing innovation and effective service to patrons.
References


Learning Commons: Addressing the Needs of Commuter Regional Campuses

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Abstract
The Learning Commons concept in academia is now fairly mainstream and in the evaluation phase at many institutions. This model is gradually making its way into non-residential campuses and proved to be a challenge for five regional libraries of a state university who sought to establish user-centered environments on a shoe-string budget and tight quarters. These Learning Commons initiatives addressed the needs of urban, suburban, and rural based libraries whose student populations ranged from under 300 to nearly 2,000. While there was no single model to address student needs at all campuses, there were commonalities in users’ expectations that guided the process and allowed the libraries to seamlessly integrate new services in support of student learning. This case study describes the tools used to gauge the needs of the University of Connecticut’s regional campus users to enable the libraries to launch learning commons that reflected the unique needs of non-residential users.

Adapting the Learning Commons Model

The Regional Campus Libraries at the University of Connecticut were charged with proposing Learning Commons plans for its five regional campuses which cater exclusively to commuter students. The campuses are now bringing together much of the new technology and services that these students require to complete their assignments, thereby adapting the Learning Commons model to meet unique student populations.

In defining “regional campus libraries,” this case study adhered to the National Center for Education Statistics (NCES) designation as described in Brandt, Frederiksen, Schneider, & Syrkin (2006), referring to permanent facilities within a “commuting distance” offering distinct majors and both undergraduate and graduate programs.

By focusing on the specific climate of each campus, space was reinvented to address the needs of non-residential students within urban, suburban, and rural settings. Incorporating commons service models into regional academic libraries meant addressing the diverse needs of commuters and non-traditional learners who often sought quiet above all else as they breezed in and out of campus, yet required occasional group space for projects; and by providing effective one-desk support that addressed reference, writing, and technical support.

Literature Review

Identifying learning commons literature that addressed the needs of students who are rarely on campus for more than the time they have to spend in classes, yet often sought quiet or group study space in between jobs and homes, required some digging. Surprisingly, there was a substantial lack of material where commuter campuses were concerned in view of the fact that that approximately 86% of college and university students were defined as commuter students: “that is, students not living in university-owned housing” (Tenhouse, 2002). Sloan (2008) reports that half the nation’s twenty million college students are considered commuters (“The Latest Trend in Higher Education,” para. 5). Lack of literature may be linked to the fact that regional libraries are often considered “second-class citizens” in the library system if the target audience is undergraduates who don’t typically pursue “research” (Webb, 2000, p. 87).
The “Information Arcade” at the University of Iowa transformed thousands of square feet of space with a generous six figure grant and involved numerous stakeholders (Creth & Lowry, 1994). This may well have paved the way for the abundance of literature that ensued on the learning commons concept, however much of this literature describes collaborative environments among larger residential universities. A review of the literature using alternating terms of “learning commons” and “information commons” was replete with scenarios comparable to that of the University of Iowa (Beagle, Russell, & Bailey, 2006). In searching for “blended learning” and its applications to commuter libraries, again the literature review was disappointing with regard to a commuting student population (Garrison & Kanuka, 2004). Bierce Library at the University of Akron addresses diversity within the Learning Commons model and includes “a significant number of adult learners and evening students” in its model to some degree (Franks & Tosko, 2007). Because diversity of user population is what defines regional campuses, their focus on diversity of ability was not applicable. Ohio University did not initially include regional campuses in learning commons planning in 2004. They subsequently introduced a regional campus learning commons in response to “an increased need for a gathering place for students since they do not have residence halls” (Ohio University Chillicothe's Learning Commons, 2007).

Although the enrollment and culture greatly deviated from that of the regional campuses at the University of Connecticut, planning efforts relied heavily on the unpublished plan of the University of Connecticut Learning Commons Project Team, which focuses on the needs of the main campus in Storrs. The plan, as with so many others during the past decade, was guided by Lippincott’s mission of a learning commons: “to leverage the intersection of content, technology, and services in a physical facility to support student learning” (Lippincott, 2006). Main campus findings provided much insight into the survey literature that subsequently impacted the regional campuses’ initiatives.

**Learning Commons Project: Main Campus**

The University of Connecticut (UConn) is a research intensive university and the state’s flagship institution of higher learning with enrollment of over 29,000 students. The UConn Libraries consist of 2.7 million volumes and over 91,000 currently received print and electronic journals across six campuses, with the main campus library, the Homer Babbidge Library (Babbidge), housing the majority of the holdings. Babbidge was built in 1978 and completed a $40 million renovation in 1998 and is located at the center of the Storrs academic core, serving both graduate and undergraduate programs.

The genesis of the Learning Commons projects at the regional campuses grew out of the successful beginnings of an initiative at the main campus library. A team of staff members from the UConn Libraries and the Institute for Teaching and Learning (ITL) was formed in late May 2006 to build on the elements of a Learning Commons that were already in place on Level I of Babbidge. These elements included: a large computer lab, internet cafes, hands-on information technology training rooms, wireless Internet, IT support, and reference and research services. The team shared the concept with various components of the university community to obtain feedback and suggestions and to develop partnerships. They learned that there was a strong interest in consolidating academic support services, for creating learning spaces outside of classrooms, and that the commons be a support mechanism for the General Education competencies skills that are required of all undergraduate students. These competencies include computer technology, writing, quantitative skills (Q), second language proficiency, and information literacy.

Funding for the Babbidge Learning Commons started with the project team partnering with the University Foundation. They began by identifying three specific aspects of the Commons that would be targets of the fundraising: iStudios (group study rooms with collaborative workstations), tutoring studios, and Media Studios (studios for editing digital media projects). Specific alumni class gifts and target amounts were established. As space for the Writing Center, Q tutoring, and the Learning Resource Center (LRC) was made available for campus partners to bring these outside units into the Library, those partners contributed furniture and equipment as appropriate. In addition, the team received funds from the UConn Libraries’ equipment budget to fund iStudio workstations.
Regional Campuses

In addition to the main campus in Storrs, CT, there are five regional campuses across the state: Avery Point, Greater Hartford, Stamford, Torrington, and Waterbury (see Table 1). All campuses started as “feeder schools” to the main campus where students completed their first two years of an undergraduate degree at the regional campus before transferring to Storrs, and they still serve in that capacity as well as now offering undergraduate four year degrees and seven graduate degrees at four of the campuses. The source of enrollment data used in planning was generated by the University’s Office of Institutional Research (University of Connecticut Office of Institutional Research, 2007). In the fall of 2009, the regional campuses served nearly 21% of the undergraduate enrollment at UConn and 32% of the graduate enrollment (not including the Health Center and Law School). Each campus has its own identity, serving traditional and non-traditional students at various locations across the state.

Table 1

*Fall 2009 Enrollment by Regional Campus*

<table>
<thead>
<tr>
<th>Campus</th>
<th>Undergraduates</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avery Point</td>
<td>713</td>
<td>38</td>
</tr>
<tr>
<td>Greater Hartford</td>
<td>1,299</td>
<td>1,470</td>
</tr>
<tr>
<td>Stamford</td>
<td>1,294</td>
<td>492</td>
</tr>
<tr>
<td>Torrington</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Waterbury</td>
<td>20</td>
<td>50</td>
</tr>
</tbody>
</table>

The Avery Point campus, located on the Long Island Sound in southeastern Connecticut, has a focus of marine sciences and maritime studies. It enrolls 713 undergraduates and offers four-year degrees in Coastal Studies, Maritime Studies, American Studies, and a Bachelor of General Studies (BGS). There are 38 students in the graduate program in the Marine Sciences department, which also supports the Coastal Studies program (Heckman & Heckman, 2009).

The Greater Hartford campus, in suburban West Hartford, has a focus on metropolitan issues, public policy, and health policy. There are 1,299 undergraduate students and available majors include: BGS; Business and Technology; Human Development and Family Studies (HDFS); Psychology; and Urban and Community Studies. Two Master’s programs in Public Policy; a MSW and PhD in Social Work; the Teacher Certification Program for College Graduates (TCPCG); and a MBA, EMBA (Executive MBA); and MS in Accounting account for 1,470 graduate students.

The campus in urban Stamford enrolls 1,294 undergraduate students and has had four-year majors since the 1970s. Currently available degrees include American Studies, BGS, Business and Technology, HDFS, Economics, History, English, Political Science, and Psychology. There are 492 students in the MBA program. The focus of the Stamford campus is International, Business, and selected arts and sciences programming.
The smallest campus, Torrington, is in the northwest corner of the state and currently enrolls 273 students. The rural campus’ focus is arts and humanities and there are no graduate programs offered. Students can complete bachelor’s degree programs in American Studies, BGS, Business and Technology, HDFS, Psychology, and Urban and Community Studies.

Another urban campus is Waterbury and its focus is on Civic and Community Engagement. There are 909 undergraduate students and the campus offers majors in American Studies, BGS, Business and Technology, HDFS, English, Psychology, and Urban and Community Studies. There are 120 students in the MBA program and 18 students in the TCPCG.

Each regional campus has its own library, with volume counts from 16,000 to nearly 100,000, operating primarily as a public service operation for its campus. Together with Babbidge, these UConn Libraries share a single catalog and form a single collection; each library unit serves as a full gateway to the entire collection. The Libraries’ networked resources, including databases, journals, books, and reference tools, are available to all members of the University community via the Internet.

Extending the Learning Commons to the Regional Campuses

In the spring of 2007, staff at the Regional Campus Libraries (RCL) began consulting with the main campus Learning Commons Project Team. The RCL Learning Commons Team was formed with a membership of five RCL Directors, two staff members, and the RCL’s Area Head. By June 2007, the RCL staff had created a goal for the Area Head “to develop plans for transforming student learning spaces” with the understanding that these would most likely vary from library to library. The team created a Project Plan that included information gathering, conversations with communities, and planning and development phases (Appendix A). On June 5, RCL Directors and other staff members attended a Northeast Regional Computing Program (NERCOMP) Special Interest Group (SIG) workshop called *Uncommon Commons* in Norwood, Massachusetts to learn how four libraries had used the concept of the “commons” in unique ways. Team members surveyed local libraries and made site visits to local university libraries. Throughout the next six months, members of the main campus’ LC Project Team made “road show” visits to each campus to educate various campus constituencies, sharing insight based on their extensive research of what a learning commons is and the ways current students learn. This enabled directors at each RCL to have conversations with campus directors, faculty, students and staff in student services, writing center and tutoring services, IT, and the library.

Creating a Survey

Because students at the regional campuses commute from various distances -- there is no on-campus housing at any campus -- the campuses were challenged to provide facilities and services that would accommodate the students’ needs. The team believed, as Forrest and Halbert (2009) later said that, “…like politics, all information commons are local” (p. xv). The next step for trying to ascertain how a learning commons could work in the specific environments of regional campuses was to conduct a survey.

Initially, the team crafted a survey that focused on the libraries and discussed the idea of doing a different survey for each campus. The team shared a draft of the survey with writing center and student services staff at the campuses and decided that a survey that included questions about the other learning components would be more useful. At this point, the learning commons concept became a collaborative initiative, helping to set aside the issues of funding source or staffing the units. There was noticeable campus buy-in once the intent of the survey was clarified: to discover how students used various campus services and how they felt the services could be improved. Sections in the survey included: (a) Research and Studying Environment; (b) Library; (c) Writing Center; (d) Tutoring Services; and (e) Technology (see Appendix B). The survey was administered in January 2008 using SurveyMonkey software. An email was sent to nearly 5,800 undergraduate and graduate students via listservs at each campus including a link for the survey (see Appendix C).
Results of the Survey

RCL staff analyzed and tabulated the data and distributed the results to other campus constituencies. The survey yielded a surprisingly high response rate of 17% among enrolled students, representing the preferences of some 75% of undergraduates and 25% graduate students. Forty-nine percent of the undergraduates were first-year students. Of the 30 questions, the first three were demographic, relating to respondents’ status, years of attendance, and primary campus affiliation. The remaining questions were in a Likert-type format to measure students’ satisfaction and preferences with regard to the library, writing center, tutoring services, and technology support. The survey included one open-ended question per section allowing respondents the opportunity to suggest improvements. As with many residential campus students, the sampling of the commuters showed preferences for extended hours, liberal food policies, and collaborative learning environments. There was also an expectation of one-stop access so that tutoring and technical support would fall within the confines of the library.

With a 79% satisfaction rating, the regional libraries were clearly in a positive zone. The survey verified that students used the library primarily to study or use computers. Computer use was equally divided between classroom tasks and personal/recreational use. Of the 454 open-ended responses generated in response to “Please let us know what we can do to improve your research and studying environment,” nearly 30% expressed the need for more lenient food and beverages policies. Of significant concern, representing nearly half of the comments, were complaints over excessive noise and shortage of study rooms. Some 75 comments sought additional computers with larger work areas and access to electrical outlets. Forty-five comments suggested more comfortable furnishings and enhanced lighting. Unlike students at residential campuses, regional respondents portrayed the library less as a social venue, and more as a much needed place to complete class assignments individually or collaboratively to complete group projects.

There were numerous expressed concerns with the writing center and tutoring services, with 30% and 24% satisfaction rating (respectively). When asked “How many times do you use the writing center (or tutoring services) in the course of an academic year?” 65% of respondents indicated “not at all.” While 375 and 228 (respectively) reported limited writing and tutoring center use due to insufficient staffing, hours, and lack of visibility, a comparable percentage reported that “I don’t need writing/tutoring help.” Of the 259 open-ended comments inquiring about improvements to the writing center, 25% suggested the need to publicize the center and to make it more accessible. The 219 open-ended comments relating to tutoring services voiced comparable concerns. From these results, it seemed evident that providing more visibility to these services would enhance use and promote increased satisfaction among students.

Technical support services on campuses had a 57% satisfaction rate among respondents. Respondents indicated comparable use of campus computers for course assignments/web management system and personal/recreational use. Unlike responses for other campus units, the 31 open-ended responses inquiring about improvements for technical support included only discipline specific software suggestions rather than enhanced services. From these results, it seemed evident that students considered themselves technology veterans and were not interested in classes or workshops to enhance or learn new skills.

Next Steps

The survey indicated that students were receptive to the idea of a learning commons that would provide enhanced library resources, improved furnishings, and tutoring and technology services. Each of the five regional libraries proceeded with a plan unique to their campus, within a short period of time and limited funding, sharing some commonalities that included:

- Aggressive weeding to open up space within the library
- Increased collaborative learning opportunities
- More lenient food and drink policies
- Upgraded library terminals to include MS desktop applications software
- One-desk service to replace traditional reference desks
• Enhanced signage
• Established collaboration with writing/tutoring centers
• Upgraded furnishings
• Emphasis on optimizing space without undergoing extensive remodeling/construction

Planning at Each Campus

As each regional campus has its own identity and academic focus, so too each regional campus library’s efforts towards introducing Learning Commons components onto its campus would vary. In some ways, the facilities in Stamford and Waterbury, the urban campuses, were out in front as they had newer buildings. The libraries at Avery Point, Greater Hartford, and Torrington were in older buildings; the Avery Point library was built in the 1930s and Greater Hartford and Torrington in the 1960s, with little renovation and minimal upgrading to furnishings in the interim. Thus, Stamford’s library, built as part of the larger, one-block campus in 1998, included several group study spaces, data jacks, wireless connectivity (by 2001), and soft-seating areas. Waterbury’s campus, built in 2003, included a library with pop-out data and electrical outlets on side tables, soft-seating areas, and group study rooms. However, both campuses require enhancements to better serve their users in a Learning Commons environment.

The Avery Point library was furnished in 1987 and had received minimal upgrading, including wiring for technology, air conditioning for the first floor only, and wireless access. There existed study tables and carrels, with a leaky skylight on the second floor, and only one group study room that included compact shelving for journals. In 2007 and 2008, library staff met with the Academic Center, comprised of tutoring and technology support, to discuss merging all units. The Academic Center, located in a separate building on campus, opted to remain in their current location. Staff from the library and the Center are currently collaborating in a variety of projects: a librarian serves an hour a day in the Center, student workers are cross trained, and both units maintain a variety of Web 2.0 tools. The Avery Point library is slated to receive $3 million to upgrade the library building as part of a state plan. The library pledged to commit funds to upgrade furnishings on the first floor of the two-floor building in summer 2009. Soft-seating areas, individual carrels, café height tables, and a collaborative workstation with a 24 inch monitor currently fulfill some of the needs identified by students in the survey. Future enhancements include upgraded wiring throughout the library, two iStudios for the second floor, an electronic classroom, reduction of the stacks, and additional soft-seating.

The Greater Hartford’s library, named the Harleigh B. Trecker Library, was built in the mid-1960s and has also had little renovation and maintenance to the building for nearly four decades. The campus formed a Learning Commons Committee which was co-chaired by a librarian and an IT staff member in 2007. One year later, the committee concluded that it wasn’t feasible to move the IT services, the writing center, tutoring support, student advising, and the library -- scattered throughout the campus -- into a single location. The committee recommended the development of a Virtual Learning Commons that would provide a portal to each function from the campus web page. The Trecker library created commons-like spaces by utilizing existing and donated furniture from a cafeteria on campus and by clearing out a room that had previously held library stacks. It created a large, wireless group study room, and extensive weeding of reference materials and print journals allowed for a “parlor” area with soft seating. The promise of repairing the roof of the library building became a reality and served as the impetus for the UConn Libraries to update the furnishings. A library services one desk was custom built and includes an area for a reference librarian, eliminating the separate reference desk area. In the spring of 2009, the library received a makeover with new furniture and new signage. This included café tables and bright-colored chairs, single person study tables, a large group consultation table, several soft seating areas, chairs with laptop “tablets”, cloverleaf-shaped tables for computer workstations, carpeting, and vertical blinds. The second floor group study room received smaller reconfigurable tables and new chairs, a projection screen, and a projector to allow this room to be used for library instruction. The Libraries anticipate further upgrades, including wiring, iStudios, new stack ends, renovated group study rooms, and a renovated staff area.

In many ways, the Stamford campus has the most natural situation to create a learning commons. The campus is housed in one three-story building the size of a city block and has a street-side concourse. The library, café, bookstore, and art gallery all have first floor entrances from the concourse and therefore
are highly accessible. The campus computer lab, writing center, and the Source for Active Learning (tutoring center) were located on the third floor and less accessible. Library staff met with the campus director and staff from the Writing Center, Source, Student Services, and the Computer lab to discuss moving components into the spacious library. The Writing Center and the Source were very interested, as their current location was remote and could easily be moved. In the fall of 2007, initial collaboration included holding Writing Center workshops in the library electronic classroom. This classroom, the Thomson-Reuters eClassroom, was upgraded with a new teaching workstation, enhanced lighting, replacement laptops, and a new AMX control system. Subsequently, two new projectors were installed. In the spring of 2008, back journals were weeded to allow the removal of 16 stacks, and space was opened up to allow for the Writing Center and the Source which relocated to the corner of the first floor of the library. Future plans will explore the option of moving the computer lab into the library; building iStudios, tutoring, and media presentation rooms; upgrading furniture; and creating a central information desk that could house IT students as well as librarians.

The smallest campus, in Torrington, is in a building built in the 1960s with library furnishings that were no fresher. The Learning Center, which houses writing and tutoring services, had been renovated and is located across the hall from the library. Since the computer lab was situated nearby, combining services on such a small campus seemed impractical. The focus for the library then became upgrading the facility and furnishings. In spring 2008, UC Libraries purchased soft seating, including an upholstered chair with a tablet arm, a collaborative table with a large monitor, and four task chairs. In Fall 2009, the campus director enhanced this purchase with three study tables and twelve chairs, and subsequently matched funding for computer cloverleaf workstation tables. The library has also put in place a collaborative effort with the Learning Center to cross-train staff members and student workers. Future needs include air conditioning, upgraded wiring, new lighting, and group study rooms.

The urban Waterbury campus, in one three-story building, was built in 2003. Because of a growing awareness of the Learning Commons concept, the Writing Center was placed within the library. Subsequently, the Math Center relocated to the library as well because of limited space issues on campus. The Math Center room now serves a dual-purpose, as equipment was installed in 2008 and upgraded in 2009, it now permits instructional sessions within the library. There are soft seating areas, group study rooms, and laptop tablets, but the design of the library, with an atrium extending three floors, allows for a great deal of noise throughout necessitating more group study rooms. The comfortable furniture is now aging and wearing out and there is the need for larger work areas in the computing area. There is also the need to explore noise reduction/absorption systems to address ongoing patron concerns.

Conclusion

The General Education Oversight Committee (GEOC) at UConn has indicated that the “unofficial education of students should happen in the learning commons” (2009). At this point, the regional campuses have made strides toward creating learning commons reflecting their campus’ needs. The effectiveness of the regional commons addressing the learning needs of students requires assessment. Preliminary indicators of success are increased gate counts at all regional campuses; positive anecdotal feedback from students, faculty and campus administrators; expansion of the library’s role in the writing process; and more effective use of library space for instruction. The regional campuses will be participating in the main campus’ assessment initiatives. These will include surveys, filmed interviews, and student “monologues” in the spring of 2010. LibQual data from the 2011 survey will further serve to gauge user satisfaction.
References


Appendix A

Learning Commons Task Force
Regional Campus Libraries
Project Plan Outline

Phase 1. Information Gathering
A. Environmental Scan for best practice
   1. Literature review
   2. Learning Commons site visits
      a. In-person
      b. Virtual
   3. Create surveys – could be different for each library
B. Attend conferences and programs
C. Consult with key people at Storrs
   1. Scott Kennedy, LC Project Manager, HBL
   2. Dave Avery, Facilities Librarian, HBL
   3. Steven Park, LRC Manager, HBL
   4. Kim Chambers, Director, Educational Technologies (ITL), Storrs
   5. Tony Molloy, IT Support Services, HBL
D. Consolidate information gathered [END OF AUG. 2007]

Phase 2. Conversation with Communities
A. Identify people to involve at each campus
B. Presentation by Scott, Kim and Steven to each campus
C. Meet with groups and key players
   1. Writing Center
   2. Campus IT staff
   3. Tutoring services
   4. SGA and other student groups
   5. Campus director
   6. Library staff
   7. Student services staff
      D. Conduct survey and tabulate information (Jan.-Feb. 2008)
      E. Conduct focus groups
F. Consolidate information gathered [Fall 2008]

Phase 3. Planning and Development for each library
A. Meet again with partners on campus
B. Create vision and goals
C. Define services and decide on LC components to include
D. Consult with BKM interior designer
E. Decide on locations
F. Cost estimates
   1. personnel
   2. equipment and software
   3. wiring
   4. furniture
   5. renovations
G. Draw up floor plans [Spring 2008]
## UConn Regionals: Learning Commons Survey

### 1. SURVEY INTRODUCTION

We want to find out your experiences with the library, writing, tutoring, and technology services on campus and ask that you complete this brief survey. The information that you provide will help us plan the Learning Commons, where students will be able to find services that enhance learning, writing, research, and teaching.

The survey has 28 questions. Answering the multiple choice questions should take approximately 10 minutes. We welcome your suggestions at the end of each section. After submitting the survey, enter your Huskynmail email address (which will be kept confidential and will not be linked to your survey response) for the raffle. The winners of the iPod Nano (one per regional campus) will be notified by email.

IMPORTANT: Clicking the "Next" button on each page will save your answers; if you want to go back to previous pages to change your answers, you may do so by clicking on the "Prev" button on your internet browser. However, once you click "Done" on the final page of the survey, your answers will be sent and you will not be able to make changes.

Thank you for your time!

1. Please indicate your status:
   - Undergraduates
   - Masters
   - Doctoral

2. How long have you attended UConn?
   - 0-1 years
   - 2-4 years
   - 4+ years

3. Your Primary UConn Campus:
   - Avery Hall
   - greater Hartford
   - Stamford
   - Storrs
   - Torrington
   - Waterbury
   - Other (e.g., Law, Health Center)

### 2. A. RESEARCH AND STUDYING ENVIRONMENT

4. Where do you prefer to work on assignments when you are on campus? (check all that apply)
   - Student Lounges
   - Student Government area
   - Empty rooms on campus
   - Courtyard/Outdoors
   - Library
   - I don’t work on assignments on campus
5. How important are the following to you when you work on assignments alone? (check all that apply)
- individual workstations/study carrels
- study tables
- soft seating (e.g. sofas)
- electrical outlets
- individual rooms
- access to a computer (not your own) with online access
- access to whiteboards and markers
- access to in-person help
- access to online help
- quiet area

6. Please let us know what we can do to improve your research and studying environment.

3. B. LIBRARY

7. How satisfied are you currently with your learning experience at the library?
- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Undecided
- Somewhat Dissatisfied
- Very Dissatisfied
- Don’t Know/Don’t Use

8. How many times do you typically use the library in the course of an academic year?
- Almost every day
- A few times a week
- A few times a month
- A few times a semester (1-3)
- Maybe once or twice
- Not at all
UConn Regionals: Learning Commons Survey

9. Where do you prefer to work on assignments when you are in the library? (check all that apply)
   - Computer workstations
   - Study rooms
   - Main floor of the library
   - Upper floors of the library
   - Study tables in the Library
   - Carrels/Study carrels in Library
   - Open areas with casual seating
   - I don’t work on assignments in the library

10. Indicate reasons why you haven’t used the library. (check all that apply)
    - Location is inconvenient
    - The hours don’t work with my schedule
    - There wasn’t anyone to help me when I went
    - I don’t need research help
    - I rely on others to help me with research
    - I use the library

11. Indicate the services/resources expected from the library (check all that apply)
    - Help with assignments
    - Help with specific software (MS Office Word, Excel, PowerPoint, etc.)
    - Support for printing/saving documents
    - Help with UConn resources (Huskymail, NetID, Peoplesoft, HuskyCT/Vista)
    - Finding resources for papers
    - Research
    - Computer workstations for accessing the Internet
    - Computer workstations for writing papers
    - Group study space
    - Scanning equipment
    - Filing Equipment
    - Rooms equipped with computers/projectors and audio/video recording equipment
    - Study space for after-library hours

12. Please let us know what we can do to improve your research and studying environment at the library.

4. C. WRITING CENTER
UConn Regionals: Learning Commons Survey

13. How satisfied are you currently with the writing center services?
- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Undecided
- Somewhat Dissatisfied
- Very Dissatisfied
- Don't Know/Don't Use

14. How many times do you typically use the writing center in the course of an academic year?
- Once a week
- A few times a month
- A few times a semester (1-3)
- Maybe once or twice a year
- Not at all

15. Indicate reasons why you haven’t used the writing center? (check all that apply)
- Location is inconvenient
- The hours don’t work with my schedule
- There wasn’t anyone to help me when I went
- I don’t know how to sign up for an appointment
- I don’t need writing help
- I rely on others to help me with writing
- I didn’t know we had a writing center
- I use the writing center

16. Indicate the services expected from the writing center (check all that apply)
- Brainstorming/Prewriting
- Thesis Statement
- Revision
- Formatting (e.g. MS Office Word, Excel, Powerpoint, etc)
- Grammar/Sentence Mechanics
- Citations (e.g. MLA, APA, etc.)
- Finding and using sources in papers
- Help with lab reports (biology, chemistry, etc.)
- Other (please specify)

17. Are you aware that the writing center offers workshops on common writing issues?
- Yes
- No
UConn Regionals: Learning Commons Survey

18. Please let us know what we can do to improve the writing center.

5. D. TUTORING SERVICES

19. How satisfied are you currently with tutoring services?
   - Very Satisfied
   - Satisfied
   - Somewhat Satisfied
   - Undecided
   - Somewhat Dissatisfied
   - Very Dissatisfied
   - Don’t Know/ Don’t Use

20. How many times do you typically use tutoring services in the course of an academic year?
   - Once a week
   - A few times a month
   - A few times a semester (1-3)
   - Maybe once or twice a year
   - Not at all

21. Indicate reasons why you haven’t used the tutoring services? (check all that apply)
   - Location is inconvenient
   - The hours don’t work with my schedule
   - There wasn’t anyone to help me when I went
   - I don’t need tutoring help
   - I rely on others to help me with tutoring
   - I use tutoring services

22. Indicate the services expected from the tutoring center (check all that apply)
   - Help with Q courses (chemistry, mathematics, statistics, etc.)
   - Help with statistical software (Minitab, SPSS, etc.)
   - Other
   - Other (please specify)

23. Please let us know what we can do to improve the tutoring services.

6. E. TECHNOLOGY
24. How satisfied are you currently with your technical support services on campus?
- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Undecided
- Somewhat
- Dissatisfied
- Very Dissatisfied
- Don’t Know/Don’t Use

25. What tasks do you routinely perform on a computer while you are on campus? (check all that apply)
- Email
- Write course assignments
- Use search engines (e.g., Google, Yahoo, etc.) for research
- Use the library homepage for research (e.g., find books, articles, etc.)
- Use the web for personal or recreational usage (online banking, Facebook, MySpace, games, music, etc.)
- Chat online with a librarian
- Use MS Office Products (Word, Excel, PowerPoint, etc.)
- I don’t use computers on campus

26. Which of the following software applications do you need to complete your assignments? (check all that apply)
- MS Office Products (e.g., Word, Excel, PowerPoint)
- Publishing software (e.g., Acrobat)
- Graphics software (e.g., Photoshop)
- Scanning software for images and texts
- Bibliographic citation software (e.g., EndNote, RefWorks, etc.)
- Web-based collaboration tools (e.g., Catalyst, Peer Review, etc.)
- Statistical data: (e.g., Minitab, SPSS, etc.)
- Other (please specify)
UConn Regionals: Learning Commons Survey

27. If on-campus training sessions were available, what kind of sessions would be of interest to you? (check all that apply)

- MS Office Products (e.g. Word, Excel, PowerPoint, etc.)
- Publishing software (e.g. InDesign)
- Graphics software (e.g. Photoshop)
- Web publishing software (e.g. Dreamweaver)
- Scanning software for images and texts
- Library databases
- Bibliographic citation software (e.g. EndNote, RefWorks)
- Web-based collaboration tools (e.g. Catalyst Peer Review)
- Statistical data: (e.g. MinITab, SPSS, etc.)
- HuskyCT/Visita

Other (please specify)

28. Please let us know what we can do to improve technical support.

7. PERSONAL INFORMATION

29. Please enter the following information to enter the drawing for the 36B Silver iPod Nano (3rd Generation).

Name:

N UID:

HuskyEmail:

30. Campus Affiliation:

- Avery Point
- Greater Hartford
- Stamford
- Torrington
- Waterbury
Appendix C

From: Regional Campus Library Director
To: [UCONN _STUDENTS-L]
Subject: WIN A NANO! JUST TAKE OUR SURVEY

This is no gimmick! The libraries at UConn’s regional campuses need the help of our students. We need it so much we’re willing to give one student at each regional campus an 8GB SILVER NANO – free and with only one string attached. The string? To enter our NANO drawing you must go to the following web link and complete our survey about the Learning Commons, where students will be able to find services that enhance learning, writing, research, and teaching. After submitting the survey, enter your Husky e-mail address (which will be kept confidential and will not be linked to your survey responses) for the raffle and the lucky NANO winner will be notified by e-mail. It could be YOU!

TO ENTER OUR DRAWING: http://tinyurl.com/2ctsgc

The Fine Print: The survey concludes on January 31, 2008. Entries received after that date will not be included in the drawing. The iPod Nano winner will be notified within 2 weeks after the conclusion of the survey. Only 1 Nano, which will be new in its original packaging, will be awarded for each regional campus. The winner must be a currently enrolled UConn student and must provide verification of student status. The winner must agree to allow the University Libraries to make public his/her name and student status and also to use a photo, if taken, as part of the Libraries’ public relations activities.
Marketing Research Guides: An Online Experiment with LibGuides

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Abstract
After migrating its research guides to the LibGuides content management system, the J. Paul Leonard Library at San Francisco State University conducted a marketing experiment to measure the impact of online marketing strategies on the usage of its guides. A team of librarians publicized half of a set of LibGuides in fall 2009 using home page listings, Twitter, Facebook, blog postings and emails, and compared their usage statistics between spring and fall semesters. While there was some difference between guide usage among the marketed and control group – with a 63% increase for the marketed guides and a 27% increase for the control group, analysis of individual marketing tactics using LibGuides and Google Analytics revealed an impact only in the case of direct emails. Additionally, marketing on behalf of subject specialists proved problematic given the primacy of the library’s departmental liaison model and the importance of fostered relationships in online social media.

Introduction
San Francisco State University (SF State) has a user population of approximately 27,000 students, and the J. Paul Leonard Library maintains a strong online presence in support of both education and research. Instruction librarians provide course-integrated seminars in computer labs by request for undergraduate and graduate courses. Like many academic libraries, research guides are offered at SF State as a part of the library’s research and education services.

When LibGuides was introduced in 2007, SF State's library was among the first institutions to experiment with and subscribe to the service. LibGuides met a number of immediate needs for guide authors including web-based creation, content management, and outsourced web design support. From fall of 2007 through the spring of 2009 the library's collection of research guides migrated from HTML to the LibGuides platform. In some cases guides had not been updated for many years, so migration involved revising content in addition to re-entering pages. This was done by individual librarian authors and also by a team of five librarians assigned to teach their colleagues how to use the LibGuides system. In some cases the members of this LibGuides Working Group created much of the subject guides content as surrogate authors.

Usage statistics from the 2008-2009 academic year suggested that the amount of in-person instruction librarians did influenced the number of web visits to their guides. Additionally, some popular topic guides had relatively high hit rates. A couple of online announcements had made certain guide visits spike, giving promise to the possibility of online marketing as an effective way to bring users to guides that were not typically used or advertised during instructional interactions. A marketing plan was developed by the authors to test the limits of this promising phenomenon.

Literature Review
The literature on research guides before the introduction of LibGuides questioned guide effectiveness overall, and sought to understand whether poor usage at some institutions was due to a lack of awareness about these resources. Literature from 2000 to 2006 reported a poor rate of return on the amount
of time and energy spent creating and maintaining web-based research guides. Academic libraries created in-house content management systems in order to streamline the editing process (Dupuis, Ryan, & Steeves, 2004; Reeb & Gibbons 2005), while at the same time literature began to question the use and usefulness of guides modeled on pathfinder approaches and the print paradigm (Hemmig, 2005). Reeb and Gibbons (2005) seriously questioned the usefulness of subject guides specifically, and advocated for the creation of course-specific guides for undergraduates as an alternative. Additionally, an Amazon.com style feedback survey at George Washington University “revealed a fundamental problem: many users did not consider guides to be helpful” (Courtois, Higgins, & Kapur, 2005, p. 195).

LibGuides (http://www.springshare.com/LibGuides) entered the scene in 2007 as an answer to content management problems and as the Web 2.0 solution that would make research guides useful again. A number of academic libraries have simultaneously evaluated and implemented the service (Horne, Adams, & Cook, 2009). In addition to confirming that LibGuides has made librarians’ lives easier, presentations have confirmed that teaching faculty appreciate the resources created and believe that they have improved student assignments (Horne & Adams, 2009). LibGuides is both “wildly popular” and “amazingly popular” with librarians and content creators (Springshare, 2009). And why not? Its web site states that “you, the librarian, are the key to successful research. Nobody knows research better! You're the information superhero, the knowledge professional, the info sage” (Springshare, 2009).

While there is a great deal of enthusiasm for the promise that social media shows for library marketing, it is still early in the game; some libraries have been slow to adopt these Web 2.0 tools and technologies for a variety of reasons, while others are forging ahead to implement social media marketing plans, but do not yet have a great deal of evaluative data about their effectiveness. Several library pundits, including Blyberg (2006), Casey (2008), Houghton (2005), and Maness, (2006) have offered definitions of what has been termed “Library 2.0”: the philosophical and tactical response of libraries to the rapid transformation of our digital and social landscape. Other authors such as Lepik (2007) and Mathews (2008) discuss the ways in which libraries must adopt a user-centered approach in their services and outreach in order to connect with the digital natives who use social media ubiquitously.

While these technology platforms and social spaces are new, the theory behind them is not; viral marketing is firmly grounded in both WOM (Word-of-Mouth) marketing and RM (Relationship Marketing). The classic definition of RM comes from Gronroos (1990), who states that “relationship marketing is to identify and establish, maintain, and enhance relationships with customers and other stakeholders, at a profit, so that the objectives of all parties involved are met” (p. 138). In a later article, Gronroos (1994) adds that “this definition is supplemented by a statement that such a marketing approach should lead to a trusting relationship between the parties involved (p. 3). Naturally, this concept is not news to academic librarians, who have long worn the liaison hat, investing time and energy each semester cultivating connections with students, faculty and administrators. WOM marketing goes hand-in-hand with RM; WOM depends entirely upon relationships in order to function or hold meaning for those involved. Allsop, Basset, & Hoskins (2007) describe the WOM process this way: an institution builds relationships with key stakeholders; the stakeholders then go out and participate in social networks and influence one another, possibly to the benefit of the institution.

What significance does all of this have for library marketing? According to Kenneway (2007), Mathews (2007), and Solis (2008), libraries must first acknowledge that they are participating in something that reaches beyond technology into social science, and approach social media tools opportunistically: as an inroad to gaining a deeper understanding of constituents. According to these authors, libraries need to listen before they interact, so that when they communicate, they do so authentically. This includes acknowledging that conversations about libraries are already taking place in the social media realm (whether libraries participate or not) and that there is no controlled "messaging" (Casey, 2008; Solis, 2008). It also includes participating as individuals, not institutions (Axelsson, 2008), and embracing and using all available tools and strategies in order to reap the benefits of these platforms and achieve the ultimate goal by ‘going viral’ (Braun, 2009).

The fact that people are influenced by peers with whom they have trusting relationships (but do not necessarily consider authorities) has significant implications for library service and outreach,
particularly in how we bring our liaison and outreach work to the realm of social media. As Solis (2008) notes, “relationships are the new currency in social Media”. This is good news for librarians who are already accustomed to building relationships. However, the social dynamics of Facebook and Twitter are very different from those at the reference desk or the department water cooler (whether literal or metaphorical), and a different approach is called for.

There are a number of articles describing concrete steps libraries can take to implement a social media marketing program, including those by Cooper and May (2007), Draper and Turnage (2008), Germain (2008), Houghton-Jan (2007), and Stephens (2005). And, as Houghton-Jan (2007) points out, on the face of it, these start-ups should be quick, easy, and low-cost. Despite this, according to a recent report from the Association of Research Libraries (Mathews & Bodnar, 2008), most libraries are still using traditional marketing strategies. Those who are using social media are using the more traditional blogs, with a smaller percentage using social networking sites and fewer still (just 3%) using social bookmarking. Perhaps this is because there are a number of roadblocks libraries are encountering in doing so. As Casey (2008) notes, many otherwise enthusiastic librarians encounter resistance from higher-ups who are intent upon controlling library messaging or wish to maintain an institutional presence rather than capitalize on the "cult of personality" by allowing individual librarians to participate. In addition, Casey and others describe connecting with other libraries and librarians, rather than the students and patrons they had hoped to reach. Other authors echo the frustration of being unable to make contact with the intended audience. As Mathews (2009) tells us

One problem that occurs with individual projects is that they draw the attention of other librarians. Many library profiles on MySpace are filled with ‘friends’ in other libraries. Likewise, subscribers to library blogs and podcasts are often our colleagues for other institutions…. That’s why we can’t trust the statistics (p. 72).

An increasing number of academic libraries are participating in one or more social media venues. These include: Wikipedia entries; review site entries on sites such as Yelp; profiles in Facebook, MySpace, Ning and similar sites; listings in web directories (e.g., free wi-fi listings, expert listings); presence in gaming environments such as Second Life; search engine optimization; and photo, video and audio sharing sites such as Flickr and YouTube. As a recent ARL report (Mathews & Bodnar, 2008) notes, however, it’s all investigative, and "what works best for one library will not necessarily work well for another. Furthermore, because many of these marketing and promotional initiatives remain experimental, librarians have not yet reached a consensus about how to assess their effectiveness” (p. 12).

Methods

Research Design

From the library's list of over 80 published and public LibGuides, 66 were included in the study because they had been published in LibGuides prior to February 2009. Three guides were removed from the study set because they were not listed on the library's list of research guides; they were guides for courses taught in only one of the two semesters or they were taken down during the marketing period. The 63 guides were randomized and the first half of the randomized list were marked for a control group (32 guides), with the second half (31 guides) designated for online marketing strategies. Each member of the marketing team took informal responsibility for promoting seven or eight guides in the experimental group and for evaluating the statistics of a similar number from the control group.

SF State librarians answered surveys about their personal use of LibGuides and online-marketing techniques before the experiment began. The techniques applied to the experimental group included: featuring links on the library’s home page; tagging and labeling in LibGuides for search engine optimization; posting ads and links in Twitter; making selected comments on Facebook; featuring LibGuides on the library’s blog; and sending direct marketing email messages. Usage data was collected by the LibGuides content management service for the full period, and from Google Analytics for the fall of 2009. The site usage statistics were compared over the study’s time period and also between the experimental and control groups.
Faculty Survey

In the summer of 2009, an exploratory email was sent to librarian colleagues announcing the marketing project. In August of 2009, guide authors of both the control group and marketed guides were sent a formal email and an announcement in a department meeting inviting authors to contact the team with questions. Accompanying this announcement, the authors distributed a survey to obtain information about the use of LibGuides in library instruction and reference, and to record the usual publicity and distribution of Libguide URLs by individual librarians (see Appendix A).

Home Page Feature

Starting in August of 2009, the 31 marketed guides were rotated through a daily list of Featured LibGuides (three guides per day). These were linked directly from the Library’s home page (see Figure 1). Throughout the semester each guide was listed approximately eight or nine times for a day at a time and rotated in first, second and third positions on the list.

Figure 1. Library homepage screenshot showing the location of the Featured Research Guides list

Twitter

At the start of the fall 2009 semester, a library Twitter account was created specifically for the purpose of tweeting guide URLs and spreading the message about their existence. The library account tweeted sporadically in September and October. Of the 31 marketed guides, 18 were “tweeted,” with statements such as “Understand the fashionistas http://LibGuides.sfsu.edu/fashion #SFSU” and “Scholarly information about getting old? You bet! http://LibGuides.sfsu.edu/gerontology #SFSU.” All tweets included the guide’s URL and also the hash-tag “#SFSU” in order to direct users searching for SF State (commonly known as SFSU) content to the postings.
Facebook

We did not utilize LibGuides Facebook applications during this exploratory part of the study due to unresolved technical problems. However, preliminary steps to make “friends” with appropriate groups were taken. Using Facebook accounts under their own names, one librarian on our team joined interest groups related to the subject of particular guides and posted the guide addresses on group walls, and another librarian posted five Libguide links to a general SF State Facebook group.

Blog Posting

California State University employee furloughs began August of 2009, causing the SF State campus (among others) to be closed the week of Thanksgiving 2009—a time when students typically work on research papers due at the end of the semester in December. Using this extraordinary circumstance as an opportunity, we created an entry for the Library's blog (http://jpllspot.wordpress.com/), which included preview headlines on the library's home page (http://www.library.sfsu.edu/). The blog post read, "Lost? Use a Libguide!: Need library help during the week of Thanksgiving furloughs? Use a research guide custom created by librarians for SF State students," and included links to the LibGuides home page and the library web site’s listing of research guides (see Figure 1).

Faculty Emails

Also during Thanksgiving week 2009, members of the marketing team sent direct marketing emails to faculty in select departments related to the marketed guides (see Appendix B). Prior to this, team members requested permission from the librarian liaisons to those departments, and either received lists of faculty email or were told not to send these direct emails.

Results

The methods used during the exploratory period of fall 2009 evolved as part of an experiment with the platforms, services, and efforts possible at little or no cost to our library. Despite the steep learning curve, we have been able to make some preliminary conclusions from the usage statistics available through the LibGuides web site, Google Analytics, and the statistics kept through our Library web site’s usage statistics. The marketed set of guides had an average use increase of 63% from the February/March/April period to the September/October/November period, while the control set of guides had an average use increase of 27% during this time. Close inspection of statistics revealed a direct causal relationship between in-person instruction and the number of visits to subject research guides. The more a librarian teaches, the more their guide will be used regardless of whether they instruct students to visit the site during a library workshop.

The standardized collection of usage statistics by Springshare, the creators of the LibGuides product, has encouraged the ongoing evaluation process across institutions due to the ease of obtaining this information. However, it should be noted that while LibGuides’ home pages list the number of guide views to “Popular Guides,” these are not unique visits. In fact, they include all hits on individual tabs within LibGuides. A larger number of tabs can cause a guide to rank higher, though the number of individual visitors is actually the same or smaller. Keeping this in mind, our overall analysis used LibGuides reports, but we compared the changes from one semester to the next and from control group to marketed group. Our close look at the impact of particular tactics involved looking at daily hits to guide home pages via Google Analytics.

Faculty Survey

Fourteen of 17 librarians filled out the survey (see Appendix A). The questions were intended to record the instructional usage of research guides on a regular basis, and in particular during the spring of 2009. It also asked librarians about their knowledge, personal and professional use, and integration of
particular Web 2.0 technologies, including MySpace, Facebook, Twitter, Digg, LibraryThing, Delicious, and StumbleUpon.

Ten librarians reported mentioning the existence of library guides in general during every library instructional session. Twelve reported mentioning the existence of library guides in general either often or always when doing research assistance. Three used MySpace personally, but 11 did not use it. Eight respondents reported using Facebook personally, professionally (or both), and six did not use it at all. Of those surveyed, all knew about Twitter, nine did not use it, but four used it professionally. No librarians used Digg or StumbleUpon. They did not report using these platforms to publicize guides.

**Homepage Feature**

There are approximately 49 links on the Library’s home page at any one time (see Figure 1), and the placement of the featured guides was toward the lower right hand corner of the page. These featured links included some web site redirect code in order to count the number of times users clicked on these home page links. From August 4 to December 11, 2009, the most a guide link on the home page got hit was 57 times total, while the average was 28 hits per guide over the course of 130 days. We also used Google Analytics to look at the number of visits to marketed guides for the days they were featured on the Library’s home page and there was no pattern of increased viewing. We concluded that this method had almost no impact on the guides’ usage.

**Twitter**

Again, the number of visits to individual guides was tracked using Google Analytics both for the day a guide was tweeted plus the following two days. Based solely on these numbers, we have determined that our initial attempts with Twitter were unsuccessful in the short term. However, our attempts in this regard were incomplete, since not all of the guides were tweeted during the marketing period. As of December 2009, there are 28 followers to this account, a small number that could grow were connections to be fostered. Using the term “#SFSU” in the tweets seems to have been successful initially in finding followers, but not in pulling significant numbers away from Twitter to SFSU’s LibGuides.

**Facebook**

Before the marketing period began, none of our colleagues reported sharing Libguide links through Facebook. Attempts at using Facebook were successful in cases where the librarian made postings as an individual to users who were related to the SFSU department being marketed. For example, one author was able to market her own guide by sending a message to a faculty member who chose to communicate via Facebook instead of through email. However, due to the purely social aspect of this networking site, the process would have taken on a level of disingenuousness when the resources were not authored by a member of our team or our members did not have a personal interest in the material. Furthermore, many of the Facebook “friends” were other librarians, which can have misleading impact on usage measurement and is a common complication for marketing through online social networks (Matthews, 2007).

**Blog Posting**

There were 22 hits to the blog posting during the ten-day Thanksgiving break period of 2009. Due to the small number of hits across so many existing guides, the effect of the posting remains unclear. However, an increase in Libguide visits during this time showed that this method of marketing was successful in addition to direct emails to faculty.

**Faculty Emails**

Our most successful attempts at marketing LibGuides came from the opportunistic emails team members sent just before Thanksgiving break week to department faculty and student listservs. When members of our team sent emails for departments that they were not connected with formally, they received
some enthusiastic email replies from teaching faculty – at least one from each department. Looking at month by month statistics for guide home page views, the marketed guides were more popular than the control group guides in November 2009 when email messages were sent out (see Figure 2). However, one or two subject liaison librarians were not comfortable with a colleague contacting their departments independently, even if the intention was to proactively market their guides.
Discussion

There were a number of factors that were problematic for the success of this experiment, and some of them were already evident in the literature on successful word of mouth marketing campaigns and Web 2.0 marketing (Axelsson, 2008). The first obvious complication was that those of us doing the marketing were not usually the authors of the guides. Additional barriers to successful viral marketing were time, social media’s inherent cult of personality, and LibGuides themselves becoming direct competition to the Library’s web site.

Time

The time librarians spend teaching increases the use of their guides, and the reward for an effective librarian is more work. The time librarians spend fostering relationships with faculty/students may increase the use of their guides, but it will just as likely increase the amount of instruction and reference they are asked to do (either formally or informally). Anecdotally, our colleagues have reported an increase in student requests for in-person subject specific research assistance during the fall of 2009. The challenge may lie in the reality that research guides, in many cases, are created as a substitute for time spent by librarians in individual student research consultations, but are being interpreted as an invitation to more direct contact.

Additionally, our short term results likely would not measure the impacts of relationship marketing, because in many cases online relationships through social networks take time to create and foster. While those who are intimately familiar with social marketing sites, and who have integrated Web 2.0 features of all kinds into their personal and professional lives, may find these tactics natural or seamless, it takes time to join, embrace, establish and retool networks for a marketing process to begin. Also, there is a significant tedium factor to using bookmarking and tagging for marketing and search engine optimization purposes alone.
**Cult of Personality**

Online social-marketing techniques are based on the currency of personality. Our particular experiment involved a small number of librarians promoting the products of their colleagues. However, it did not involve promoting the librarians themselves. To promote the person we would have had to be that person, or create a fictional alias (e.g., Irma Minerva). It was felt that the latter would not have been effective because transparency and authenticity are critical to successful relationships online. Guides are often created as a destination resource. However, users may not be interested in self-instruction over personal contact.

In-person instruction at our institution is the direct cause of most visits to guides. When a librarian fosters online relationships with faculty and students in the departments they serve, either through email or any of the available social-networking sites, they have a ready-made avenue for increasing awareness of their LibGuides. However, if a librarian does not foster relationships inside or outside of the classroom, it is difficult to improve the chances that their LibGuides will be marketed or play a role during in-person instruction. Given the structure of our institution’s liaison model, it was problematic for other librarians to foster surrogate relationships in a colleague’s subject area. This confirms the literature’s advice (Axelsson, 2008), but also provides a predicament for solving a long term publicity problem. More importantly, it implies that for the most part our LibGuides will not be effective as substitutions for our in-person instruction, research assistance, and relationships with students or faculty.

**Becoming the competition**

Because the SFSU LibGuides URL (http://LibGuides.sfsu.edu/) is different from the J. Paul Leonard Library URL (http://www.library.sfsu.edu) it provides complications for users learning how to navigate library resources and services. This has become a pedagogical problem for teaching librarians who want to make students aware of the research guides while ensuring that first and foremost they leave library workshops familiar with the site architecture and offerings of the Library’s web site. At the reference desk some students have even asked for the library’s web site expecting to see a picture of their library liaison because their librarian used a guide as part of in-class instruction. This confusion underscores the importance of understanding site architecture and content scope for students learning the extent of the library's resources. Librarians see guides as a means to an end, and not a destination resource, and marketing guide URLs as online destinations may confuse distinctions between locations for content and resources that provide context and instruction.

**Conclusion**

The use of library research guides and the effectiveness of most online-marketing techniques are causally related to the relationships between the guide author and their users, particularly those relationships fostered through in-person library instruction. Because our methods were employed solely for the purpose of marketing the product (LibGuides), the relationships critical to success were poorly fostered and our surrogate efforts fell flat. Marketing done by individual librarians as an extension of the online professional personality is more appropriate for any promotion of research guides, such as LibGuides. This confirms the statements and principles of WOM and relational marketing, but may be problematic for institutions where librarians are not encouraged to promote themselves as library personalities, or who do not have formal relationships established through the subject liaison model. At San Francisco State University’s library, future attempts at online social marketing will likely focus on marketing select librarians and not the guides themselves.
References


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Stephens, M. (2005, November 25). 5 suggestions for upgrading to library 2.0 (or some easy steps to get started...really) [Web log post]. Retrieved from Tame the Web: libraries and technology: http://tametheweb.com/2005/11/5_suggestions_for_upgrading_to.html
Appendix A

Faculty Survey (sample questions)

For any workshops you taught in the spring 2009 semester, please check which actions you took for the LibGuides listed below. Please say y for yes and n for no, and NA for not applicable.

<table>
<thead>
<tr>
<th>[Name of Guide]</th>
<th>Listed the guide on a handout you distributed to the class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wrote the guide url on a whiteboard or chalkboard</td>
</tr>
<tr>
<td></td>
<td>Displayed the guide on monitor/projector during a classroom visit (students did not have computers)</td>
</tr>
<tr>
<td></td>
<td>Displayed or showed the guide on monitor/projector during a hands-on workshop</td>
</tr>
<tr>
<td></td>
<td>Clicked on links listed in your guide during a classroom demonstration</td>
</tr>
<tr>
<td></td>
<td>Directed the students to visit the guide as part of their classroom exercises or activities</td>
</tr>
<tr>
<td></td>
<td>How many times did you send the guide link to your faculty during the spring 2009 semester? (please give #)</td>
</tr>
<tr>
<td></td>
<td>Do you think faculty and students visit the guide when you send the link for it?</td>
</tr>
<tr>
<td></td>
<td>Do you think this Libguide is used enough for the time the Library faculty spent making and maintaining it during the spring of 2009?</td>
</tr>
</tbody>
</table>

General Questions (Likert scale)

- Did you mention the existence of library guides in general during any library instruction in the spring of 2009?

- Did you mention the existence of particular LibGuides not authored by you during your library workshops in the spring of 2009

- If yes, which guides do you remember mentioning in seminars during the spring of 2009? (Please list them below)

- Do you mention the existence of library guides in general when you do research assistance?

- If yes, which guides do you use and recommend most frequently? (Please list them below).
Appendix B

Dear [subject/discipline] Faculty,
For your students doing research in [subject/discipline] this semester there is a library research guide available at [guide URL]. It provides information on how to take advantage of our library's sites and sources.
We'd appreciate it if you would send this link to your students. It might be especially useful next week when librarians are on furlough.
Who Trains Distance Librarians? : A Study of the Training and Development Needs of Distance Learning Librarians

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Abstract
Distance librarianship is continuing to grow in importance in the life of academic libraries. Institutions are being driven to take their programs to the students as a matter of economic survival. In libraries with a history of serving distance learners as well as residential students, the service requests from off-campus audiences have long surpassed those on campus. In addition, academic institutions are offering online courses to their residential students at an ever-increasing rate, which creates a new category of distance learning student. How do librarians obtain the training they need to serve this growing user base? This presentation looks at the cross-pollination of the variety of librarians and program foci targeted at reaching all students with quality support and service. The results of this study may provide a framework for training that can be developed by DLS, LITA, or suggested as an addition to library graduate education.

Introduction
The United States Distance Learning Association traces the evolution of distance learning from the mid-1830s (United States Distance Learning Association, n.d.). The early phase dealt primarily with correspondence courses. In 1921 the first educational radio license was issued to Latter Day Saint’s University. Beginning in 1950, distance learning moved into the television age. The link between technology growth and education has long been a strong one, even considering the early stages where correspondence was carried through a range of mail and delivery modes.

Distance learning as a field was able to grow in strength and attractiveness through the growth of media and the increased ease of access that came over time. At the same time that distance learning as a field of study was developing and growing, the companion piece – library support – was also finding its way into the mainstream. In 1963, the Association of College and Research Libraries (ACRL) began to develop the first rendition of Guidelines for Library Services to Extension Students (American Library Association, 1967). Those guidelines set the stage for the evolutionary path that has culminated with the 2008 approval of the Standards for Distance Learning Library Services (Association of College & Research Libraries, 2008). In less than half a century, library support for distance learners entered the mainstream of the library world as a codified set of standards which can be used to establish or assess library support for distance learning programs.

A major reason for this growth and maturation can be traced to a dedicated group that has worked diligently over those many years to ensure that the students under their care did receive the levels of library support they needed and deserved in order to be successful learners in their chosen fields. Originating as the Extension Campus Library Services Discussion group within ACRL, this group took on the task of maintaining and updating those first guidelines as times and delivery methods changed. In 1991, the group successfully petitioned ACRL for a change in status from discussion group to section. Later, the name was changed to better reflect the reality of its focus, and the Extended Campus Library Services Section (ECLSS) became the Distance Learning Section (DLS). As the group grew and changed, the members also
ensured that the guidelines grew and evolved to match changes in resources, delivery methods, and expectations until the final step in 2008 with the launch of the Standards. This is not the ending point, however. Even standards aren’t carved in stone. This document must continue to be a living one that evolves and adapts as needed over time.

During the past twenty years, as the various iterations of the Guidelines/Standards developed, a recurring conversation among the Section membership also evolved. This conversation addressed a shared concern about training and communication. There was a feeling that the standards alone were not the answer, but that there was an unmet need to provide greater support to the practitioners. Many ideas were proposed and debated, but a definite plan never quite developed.

The authors of this paper hope to provide a glimpse of a starting point for the next phase of support for distance librarians. They are looking at questions of training. What sorts of training are needed by practitioners? What training opportunities already exist, and how can those opportunities be delivered to those who need them? What about establishing different levels of training in order to aid both the new distance learning librarian and the seasoned veteran who needs to move to new levels of service? There is a great deal of literature about training, and, as many of us regularly tell our student researchers, it is relatively easy to take a body of literature and tease out the pieces that apply to your situation. Now it is time for us to begin to do what we’ve taught. How can we best adapt current training data to the needs of distance learning librarians? How do we deliver the needed information to the right place at the right time?

**Training Librarians on the Job**

Jones (2002) introduces her article on locating training as a new distance learning librarian by stating, “I had over a decade’s experience in libraries, but little with serving off-campus library users” (p. 309). This is a common sentiment among new distance learning librarians who may find themselves designated as the primary support for off-campus users with little in-house expertise to help them learn new roles. This innovative librarian found her own way to learn more about her new role by conducting a study among veteran distance learning librarians to discover what they considered to be the most important advice. She found it useful enough that she published the results for other new distance learning librarians. Interestingly, the most frequent advice she received was to tap into the expertise around the globe from other librarians (Jones, 2002, p. 311).

Training is not an issue that is isolated to librarians new to the distance learning field. In general, there is a continuum of on-the-job training for new librarians. Some libraries have training programs of some length and complexity while others throw librarians into the deep end and hope that they learn how to swim quickly. Indeed, a recent survey conducted among 111 new academic librarians in Canada revealed that 42% had received formal training, 46% were trained informally while 12% had no training at all (Oud, 2005, p. 86). Of those respondents who had little to no training, the most common suggestion for methods was through the use of training manuals as well as some form of hands-on instruction.

Since each library as well as the responsibilities of many of the librarians vary considerably, it is not surprising to learn that staff development and training differ by institution and that there is no one size fits all approach. There are many ways a library can facilitate training for new librarians. Among those are to look to other libraries for examples, set up peer training, assess what the training needs are, and take advantage of appropriate training offered elsewhere on campus (Wilkinson & Lewis, 2006). In addition, an investigation of staff development programs at member libraries of the Association of Research Libraries (ARL) revealed that such programs reflected the local environments (Giesecke & Lowry, 2002). However, the researchers also learned that there were core elements present in many of them. These include a coherent curriculum, staff dedicated to program coordination, target groups identified for training, program assessment and evaluation, as well as a commitment from library administration (Giesecke & Lowry, 2002).

There are numerous examples of programs academic libraries have initiated to train new librarians. At North Carolina State University, a relatively new program focuses on incorporating organizational socialization into an orientation that not only trains librarians on specifics of their jobs but
also introduces them to the organizational culture (Ballard & Blessing, 2006). At the University of Minnesota – Twin Cities, the library developed a list of core competencies in technology, assessed librarians and staff in order to learn levels of competency and then instituted training to fill knowledge gaps (Eells & Jaguszewski, 2008). In addition, formal mentoring programs, such as those at Mississippi State University (Lee, 2005) and Kansas State University (Farmer, Stockham, & Trussell, 2009), are common ways to induct new librarians into the specifics of their job requirements. Other interesting approaches include a train the trainer program at the University of Arizona, designed to educate librarians and student assistants to handle new responsibilities related to staffing an information commons desk (Sult & Evangeliste, 2009), as well as a reference librarian exchange between branches at UCLA that resulted in successful cross-training. (Carr & Kawakami, 2002).

Research Design and Methodology

Those who identify themselves as distance learning librarians have several organizations through which they can network with colleagues doing similar work. Five of these serve as the source of participants for this study. They are the ACRL Distance Learning Section, the ACRL Regional Campus Libraries Discussion Group, the LITA Distance Learning Special Interest Group, the biennial Off Campus Library Services Conferences, and the Offcamp listserv.

The mission of the Distance Learning Section is to provide leadership in promoting and supporting the development and delivery of library services for distance learning programs in higher education. (Distance Learning Section, 1999). The Regional Campus Libraries Discussion Group serves to support its members by facilitating professional development, publication and collegial networking relevant to regional campus environments (Regional Campus Libraries Discussion Group, n.d.).

Established in 1997, the LITA Distance Learning Interest Group provides a forum for the discussion of the application of technologies to distance learning library activities (Library & Information Technology Association, 2009). The biennial Off-Campus Library Services Conference, sponsored by the Central Michigan University Libraries, began in 1982. It is an international conference that strives to bring together librarians, administrators, and educators to discuss techniques and theories related to the provision of library services to students and faculty off campus or in the online environment (Central Michigan University, n.d.). The Offcamp listserv, dating to 1991, is an electronic forum for anyone interested in the discussion of library services to distance learners.

Each of the groups was approached by the authors in order to determine the best way to contact members. Since both authors are subscribed to Offcamp, they already had access to this group. Also, as past OCLS conference attendees, both were subscribed to an electronic list developed for the conference. In addition, Fritts is a subscriber and had access to the electronic lists of both the Regional Campus Libraries Discussion Group and the LITA Distance Learning Interest group. The fifth group, the Distance Learning Section of ACRL, was more difficult to reach. The list of members is accessible to DLS officers but may not be used for research outside activities of the section. However, the authors had access to a smaller electronic list affiliated with DLS and used this as a contact point. In addition, they are aware that DLS members generally also participate on Offcamp and so could be reached through this method.

The authors developed a brief, 13-question survey (See Appendix) designed to learn whether distance learning librarians had learned specific aspects of their jobs through formal library education, through participation in library associations, through conference attendance, or on the job. In addition, some open-ended questions sought to learn what training formats respondents might recommend and what other sources of training they had received. The survey was submitted to the Institutional Review Board at Benedictine University, the workplace of one of the authors, and was approved. It was sent to each of the five group electronic lists in December 2009. It was available for a limited time period: one week. No additional reminders were sent.
Findings

During the week that the survey was available, there were 141 responses. Since it is very difficult to ascertain the number of people who received the invitation to participate, the authors do not have a sense of what percent of the population this constitutes, however, it is a higher response rate than they had anticipated.

The highest response rate (45.4%) was from those who have the title of distance learning librarian or something similar. Another 44.2% of the respondents were either reference or instruction librarians. An additional major category was that of other, which at 22% of the responses, included such titles as access services librarian, public services librarian, outreach librarian, and branch campus manager. The final categories of library administrator and library staff made up 12.6% of the responses. Since the survey did not indicate that respondents should choose only one category, many selected two, demonstrating that their titles reflected both distance learning and reference, for example, or that they wanted to spell out their exact title in the other category. In terms of membership in professional associations, the majority (56.7%) belong to the Distance Learning Section. Less than 6% each belong to the Regional Campus Group or the LITA Distance Learning Interest Group. Over 45% indicated that they belong to other professional organizations, such as state library associations.

The overwhelming majority of responses (75.9%) came from librarians working at institutions that grant graduate degrees. Those at community colleges constituted another 20.6% of responses with only 3.5% coming from four-year undergraduate colleges. Almost everyone who answered the survey (95%) has some distance learning-related job responsibilities. In response to the open-ended question that queried how participants became involved in providing distance learning services, many responded that the library added that responsibility to another set of duties. Some reported that they saw a need to support distance learners and started offering services, while others were attracted to distance learning jobs after having been distance learning students themselves.

Of those, 91.5% responded that they had received no training in distance learning librarianship in their graduate library education. The majority (68.8%), however, have received some training through conference and workshop attendance. In terms of receiving training from national professional associations, the highest number (37.6%) reported that they had received training from the ACRL Distance Learning Section. Of the other professional associations listed, ACRL was listed by 27%, ALA by 15.6%, the Regional Campus Group by 4.3%, and the LITA Distance Learning Interest Group by 5.7%. More than half (53.2%) listed other, which included state library associations, library consortia, as well as the Off-Campus Library Services Conference, which was the most popular entry in the category. The question asking about types of on-the-job training the respondents received was open-ended and yielded a variety of responses, the most common of which was none. Other responses included reading professional literature and training manuals, mentoring from colleagues, and figuring it out as they went along.

In response to a question about what training formats the respondents would recommend for distance learning librarians, 80.1% suggested workshops and 83.7% recommended webinars. In addition, 44.7% thought training should be included in LIS courses, while 11.3% thought using a consultant would be beneficial. Other suggestions included mentoring, social networking sites, and professional literature as other means by which librarians can receive training.

The final question solicited many relevant responses on the topic. The answers varied but there were some common themes. Respondents noted that there is increasingly little difference between distance learning and other public services librarians and that training is important for all. Others suggested more course work in graduate library programs might help, as well as longer workshops at conferences. In addition, respondents added that broadcasting workshops and relevant conference presentations using technology might reach many of the librarians who cannot attend conferences. The respondents also consistently emphasized the need for current awareness and ongoing training and development activities for distance librarians.
Discussion

Clearly, this selected set of responses indicates a need and a desire for training in distance learning librarianship. A series of open fora held by the DLS Strategic Planning Committee in 2008 also elicited a sense of need for specific types of support for DL practitioners, especially those new to the field.

It is interesting to note that while only 95% of the respondents report some responsibilities related to distance learning, only 45% have a job title that reflects that. In addition, a large number of participants answered that their job title is either reference librarian or instruction librarian. This speaks to the supposition that appeared in several of the final comments, that most academic libraries and librarians are providing some type of support for students and faculty away from a traditional central campus setting. However, respondents also note that they need to learn more about how to use technology effectively and how to reach students and faculty who are not across the reference desk or in the library instruction classroom, and they are often not receiving this in school or on the job.

The most common formats for training that surfaced were workshops and webinars. Many of the respondents advocated for new training to be delivered in a workshop format to them. Funding is no longer so plentiful as to allow for travel to workshops at conferences or elsewhere. The fact that a strong majority indicated that they had participated as students in online courses may underscore the efficacy of professional development workshops in webinar format. However, there also emerged a strong opinion that some foundation for distance learning library techniques should be developed in graduate library programs. In other words, if distance learning librarianship permeates the fabric of academic libraries to a continuously growing degree, then the basic professional degree should be providing more education in this area.

Many of the respondents became distance librarians through chance rather than design. These respondents especially illustrated the need for the development and implementation of some type of training or support network. A common theme in the responses was that many started in other areas and gradually their positions evolved into support for distance learners. In some cases library support followed well after the launch of distance learning programs after faculty began asking for support. A majority of comments addressed the perceived need for ongoing training and support, whether through library schools or other agencies.

Of the five distinct groups that were investigated regarding their possible role in training distance learning librarians, the Distance Learning Section had the strongest showing as a provider of training for the respondents. A majority of the participants reported that they are members of this association, which may both speak to the fact that members are more aware of training from this group than elsewhere and also to the fact that some mechanisms may be in place to provide further training through DLS.

Conclusion

It is clear from the results of this survey that distance learning library services are pervasive and that there is a strong need for further training and professional development opportunities for academic librarians. There are many avenues to training; however, there were two potential means that emerged more strongly from the survey responses. These indicate that the Distance Learning Section should increase training opportunities for members, particularly in the form of workshops offered through webinars, and that library and information schools need to be encouraged to incorporate more basic information on distance learning librarianship into their curricula. The Distance Learning Section, as the primary organized advocacy body in the U.S. for distance learning librarians, is in the best position to take a lead in proposing such changes to graduate library educators. The authors are strongly committed to the development of enhanced opportunities for training and development of distance learning librarians and others with responsibilities for serving remote populations. They will encourage appropriate committees within the Distance Learning Section to begin looking for ways to provide a range of training and development opportunities. Some options, in addition to webinar presentations, could include the implementation of a mentoring program similar to that developed by Larry Hardesty and others to provide support for new directors during their early years as administrators. Another approach may be the development and
presentation of a distance learning primer as a preconference in conjunction with the ALA Annual and/or Midwinter Conferences. Finally, a concerted program of outreach to library schools and programs is a necessity, given the increasing reliance on distance learning by higher education institutions. Distance learning librarianship is moving toward the mainstream of academic librarianship, and that reality needs to be recognized and celebrated by providing the best possible training for members of the library profession. As one of the survey respondents commented:

As online education and hybrid education become more ubiquitous, all public service librarians need to be able to work with online and field-based students. However, it is still important to also have a librarian who advocates for on-line and field-based students. "Off-campus" students tend to be "invisible", particularly in institutions with a traditional student body on campus, and the distance students need to have someone represent their perspectives in the library when it comes to both services and library policies.

As the trend toward blended, hybrid, and fully online programming continues, it is incumbent upon the librarians to continue to take the lead in insuring the strongest possible support for all learners, regardless of their location.
References


Appendix

Survey Instrument

This survey is being conducted as part of a presentation for the 14th Off Campus Library Services Conference in 2010. The authors are interested in identifying training (workshops, courses, mentoring, professional development activities) provided to librarians responsible for serving distance students. Your participation is voluntary, and all responses will be confidential. Thank you for your help with this project.

1. What is your current position?

2. In what type of library do you work?

3. Do your job responsibilities include service to distant learners? If No, then please respond DNA to questions 4 - 7, and continue from Question 8.

4. How did you become involved with distance learning?

5. Did you receive any training in distance learning Librarianship in library school?

6. What kind of on the job training did you receive in distance learning librarianship?

7. Have you received training in distance librarianship through conference or workshop attendance?

8. Have you received training in Distance Learning Librarianship from:

9. What training formats would you recommend for distance learning librarians?

10. Have you been a distant learner?

11. Are you a member of any of the following organizations?

12. Have you ever attended the Off-Campus Library Services Conference sponsored by Central Michigan University?

13. Do you have any comments about the issue of training for distance learning librarians?
Librarian like a Rock Star: Using your Personal Brand to Promote Your Services and Reach Distant Users

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Abstract

The business world has been using corporate branding and relationship marketing to build customer loyalty and satisfaction. In recent decades, individuals have applied the tenets of branding to themselves to create the idea of personal branding – marketing yourself as your own brand. By thinking in terms of personal branding and relationship marketing, distance education librarians can more effectively reach out to remote students and build long term relationships that are beneficial to both students and librarians.

Introduction

The profession of librarianship has many stereotypes, from the fussy librarian in a hair-bun to the tweedy intellectual with the elbow patches. Librarians are known to love quiet and to shush loud patrons. Librarians are not often thought of as rock stars, and it was with great joy and surprise that Dan the Librarian, my personal brand, received a thank you email saying, “You are an official ROCKSTAR.” (R. Hoksch, personal communication, October 1, 2009).

Everyone likes to have hard work and professionalism acknowledged and getting thank yous is always appreciated. In times of tight budgets and uncertain futures, however, academic librarians’ ability to show that kind of positive response from students and faculty goes a long way toward proving the value of the individual librarian, and the value of the library, to the parent institution. It is easier to cut positions or funding from a library that is not seen as useful to the people who rely on it than from a library that is appreciated and defended by its users. It is difficult enough for librarians to be appreciated by people in person. It is even more difficult for librarians working with remote users.

A library, of course, is much more than a collection of books and journal subscriptions. A good library is fundamentally about the needs of the people who use it and the ability of the librarians and staff to fill those needs. Assuming the collection has what users need and the services are efficient, there are a variety of things librarians can do to make themselves valued by their users – particularly by those studying off campus.

Many qualified librarians have written books and articles about library promotion, public relations, and marketing, and this paper does not presume to cover an area of knowledge already so ably covered. In spite of the title, this paper is not even about shameless self-promotion – an area of the literature that could, perhaps, use more quality information. This article builds on all those things but is, fundamentally, about librarians getting credit for what we do and what we do well. Ultimately, it is about managing and effectively using your reputation.

The first part of this article discusses the business concepts of relationship marketing and personal branding as they relate to librarianship while the second discusses the situation of remote students who make up the target audience. The third part focuses on creating a personal brand using Dan the Librarian as an example and using the brand to build relationships

Marketing and Branding

Theories of marketing and public relations create the context for two related ideas that can help build a librarian’s reputation and keep customers returning: personal branding and relationship marketing. More than enough has been written in the library literature and in other fields about marketing, promotion,
public relations, and advertising for most readers to have a more-than-basic understanding of them. Judith Seiss in *The Visible Librarian* (2003) sets out some simple definitions that might help frame this discussion for libraries.

*Marketing* is determining who you serve and with what products. *Publicity* is getting the word out that you can help people do their jobs better-faster-cheaper. *Public Relations* is talking to people about their needs and your strengths. (p. xvi)

**Personal Branding**

The idea of corporate branding - building an association in the minds of customers for a particular company or product line rather than an individual product - has been around for quite some time. By promoting a brand rather than a specific product, businesses can promote all their products, make it easier to introduce new products and create in the minds of consumers a meaning (positive, it is hoped) for their brand.

Applying the idea of corporate branding to individuals also has a long history (think of P.T. Barnum or Mae West) but went un-named until recently. “In a 1997 article in the trendy management magazine *Fast Company*, however, influential management guru Tom Peters gave a name to the next self-help management movement: personal branding.” (Lair, Sullivan, & Cheney, 2005, p. 307). In an age of social media, the idea has migrated from a strictly business connotation and is applied to individuals. Celebrities and media commentators have created their own personal brands for years. In the library world, bloggers and commentators from Karen Schneider to the anonymous Annoyed Librarian to Paul Pival, our own Distant Librarian, do the same thing. They become known in a wider context by taking advantage of opportunities to get their thoughts published in columns and blogs, but the library profession knows them by their reputations and the quality of the things they write.

Corporations use brands to elicit a kind of shorthand in the mind of consumers. McDonalds = food that costs and tastes the same anywhere in the world and Jeep = Four-wheel drive are examples. When consumers hear or see the brand name or catch-phrase an association is created, and corporations spend a great deal of time, money, and effort to ensure that consumers make positive associations.

To a lesser extent, bloggers and other individuals work hard to create a similar kind of association in people’s minds. Readers of library bloggers like the Annoyed Librarian, the Distant Librarian and Information Wants To Be Free know what to expect from those voices because, intentionally or not, those bloggers have created associations in the minds of their readers. “Everyone has a personal brand, but most people are not aware of this and do not manage it strategically, consistently, and effectively.” (Ramparsad, 2008, p. 34).

The original idea of personal branding coined by Peters did not focus specifically on the presentation of an online identity, but was more generally applied to individuals and their conduct in business. The idea has certainly grown beyond its roots in business and can now be applied by individuals in academia (the Cornell West brand, for example) just as it can be applied to people creating online identities as bloggers. It is this less-technological meaning that I wish to focus on, although it is important to acknowledge that online presence and presentation is an important aspect of personal branding, particularly in the current academic environment and particularly when focusing on remote library users.

Personal branding is not without its problematic associations and potential for abuse, either. It may be tempting for some to see in personal branding a triumph of image over substance.

Rather than focus on self-improvement as the means to achievement, personal branding seems to suggest that the road to success is found instead in explicit self-packaging: Here, success is not determined by individuals’ internal sets of skills, motivations and interests, but, rather, by how effectively they are arranged, crystallized and labeled – in other words: branded.” (Lair, et. al, 2005, p. 308)
Just as in corporate branding, though, a critical component of a long-lasting and respected personal brand is that it evokes trust and quality. Consumers are not fooled for long and your personal brand will suffer if it is not backed up by quality work and effective action.

Another, perhaps more comfortable, way to think about your personal brand is as your reputation. “A bad reputation is like a hangover,” said James Preston, Avon CEO in the mid-90’s, “It takes a while to get rid of and it makes everything else hurt.” (Caminiti & Reese, 1992, para. 26). Using the more businesslike term personal brand encourages a deliberate thoughtfulness in managing our reputations that, one hopes, helps avoid Preston’s hangover.

Although the idea originated in the business sphere, the best summation of personal branding for librarians comes from school librarians - “A brand is an idea in the mind of your constituents created by what you say and do.” (Abilock, 2007, p. 8). It is this idea in the mind of our constituents that individual librarians need to manage and build on.

**Relationship Marketing**

A style of marketing in which there is a congenial interaction between suppliers, distributors, retailers and consumers which thus makes it possible for marketers to build trusting long term relationships with each party in the selling chain and to be able to count on excellent service and cooperation. (Cross, 1995, p. 306)

The term “relationship marketing” entered the business lexicon in the 1980’s to describe the idea that a sales transaction doesn’t end when the money changes hands. Rather, it is beneficial for both the buyer and seller to develop a long-term relationship which provides support and help to the buyer and, it is hoped, a return customer who will spend more money with the seller.

It is a mutual interest between company and customer. It is not a new concept. In fact, it is as old as the merchant trade itself. It is the demonstration of deep and abiding regard for the customer and this is displayed in the products and services sold, in the interaction between company and customer, company and potential customers, company and suppliers, and so on. …Why have libraries not jumped on the RM bandwagon as they have jumped through the hoops of other business fads…? (Besant & Sharp, 2000, p 18.)

Academic libraries generally do not have a direct sales function, but they do have a history of building lasting relationships with different stakeholders, including university administration, researchers, instructors, and students. Indeed, one of the most important things that a good academic library can offer is a long term relationship with the people who use library services.

To many, the idea is so basic as to not really fall under the heading of marketing. SLA member and information consultant Ulla de Stricker (2000) puts it in a useful context:

Let me just jump in and say it now: Marketing isn't our issue. Relationships are. Marketing is misunderstood and misplaced if it isn't seen as a natural consequence of everything else we do— the systematic efforts we make to understand our organizations' inner workings; the probes we mount to ferret out our clients' and non-clients' challenges and deliverables; the ongoing conversations we have with stakeholders. In other words, if relationships are done right, marketing takes care of itself. (para. 4)

Relationship marketing is contrasted in business literature with what more traditional marketing that Besant and Sharp call “transactional marketing.” In a library context, transactional marketing would find importance in the number of transactions that can be counted. Think of the typical library emphasis on counting reference questions and circulation. While those quantifiables have an important place in assessment, “Just measuring user encounters or transactions isn’t getting the job done any more.” (Besant & Sharp, 2000, p. 20).
Savvy librarians have long known the advantages of building relationships with library users, ensuring their satisfaction and encouraging not only return business but also their support with funding agencies. Indeed, the departmental liaison model of academic library service can be thought of as relationship marketing in a very formal sense of the term.

If relationships with our customers (library patrons, users, stakeholders – the term is less important than the idea it describes) are important for the goals of the librarian, how much more important are they for the distance education student who sees the academic support systems of a university campus as being remote?

The Loneliness of the Long Distance Student

It is axiomatic that students engaged in distance learning programs are isolated – geographically, of course, but also in terms of human connectedness or connectedness to the university. “Distance is both a characteristic and an obstacle in distance education.” writes Jianling Jiang, “The distance separates the students and the instructor, the students and on campus academic resources and the students from each other.” (2008, p. 24).

While Jianing’s study of isolation among students in distance education programs focuses on the online environment, many of the assumptions and conclusions about access to academic resources can be applied regardless of the course format. Librarians working with remote students have plenty of anecdotal evidence that students feel disconnected from resources and people that can help them, including librarians.

In online distance courses, the learners are not likely surrounded by a group of people or academic resources, but more likely to be alone with computers in individual homes or in public libraries. Many distance students are adult learners with full time jobs and/or other family responsibilities. Often the time available for distance course assignments is late at night after taking care of work and other responsibilities. Sitting in an empty room and facing a computer screen does not naturally lead to the feeling of connectedness. (2008, p. 25)

Other student support professions, such as academic advising or financial aid, are also faced with challenges in reaching out and connecting to remote students. Solutions range from revamping websites to seeking efficiencies in providing online student services (Kendall, 2005). In the world of librarianship, the idea of embedded librarians can be seen as an outreach effort that, if not targeted specifically at geographically remote students, is certainly applied to online classes. By searching ERIC or other education databases, it is possible to track a growing awareness on the part of administrators and student support personnel of the need to reach out to remote students. An Acknowledgement of this trend is provided in a 2007 Campus Technology article:

Systems and services for recruiting, advising, and support of online students have seldom been at the top of the list when planning online and distance learning programs…. The recent release (September 2006) of the Spellings Commission report, A Test of Leadership: Charting the Future of US Higher Education, notes a lack of systems that track the progress of individual students over time and across institutions—and is sure to increase the focus on these systems…The key to affordability for these systems probably lies in approaches that encourage a long-term relationship between the student and the institution. (Boettcher, 2007, p. 22)

The building of relationships again is the key to reaching out to remote students. Librarians, with a mandate to provide support for students’ information needs that have a direct and immediate impact on student success, are in an excellent position to create those long-lasting relationships.

Imagine you are the disconnected student Jiang described in previous paragraphs – staying up late, alone, surrounded by glowing computer screens and far, both geographically and emotionally, from the support you need. Imagine what kind of librarian that student wants to work with. That student needs a librarian who is easy to find and easy to approach. That librarian needs to be well enough known that the
student even thinks of a librarian when one is needed. It is here where the power of the personal brand and relationship marketing come to the fore.

**Your Personal Brand**

These two related ideas, personal branding and relationship marketing, work inherently well together and may even be considered to be part of the same marketing package. Individual librarians create an idea (or more often change a pre-existing idea) in the minds of students, faculty, and administrators about what that individual librarian is and does, thus creating a brand. Through consistent application of that brand, students, faculty and administrators know what to expect. Assuming the idea they have of the librarian is positive, they return for repeat business.

Creating a personal brand is, in many ways, simply being mindful of and deliberate about things that we do regularly and sometimes unconsciously.

**Creating Your Brand**

Understand what your brand already is. Academic librarians in general already have a brand, whether it is acknowledged or not – librarians are the people who know where the information is. While that is a mostly-positive stereotype, some customization or personalization would make it more effective as a personal brand.

Do what you are good at. This may seem a bit simplistic, but focus on your talents and what you enjoy. Part of the success of your personal brand is that it expresses your strengths and, ideally, those strengths are things you also happen to enjoy. Ramparsad (2008) has some good advice that some might find surprising in an article targeted to businesspeople, “Love is an important element in this personal branding equation. It is about loving yourself..., loving others and loving what you do.” (p. 34).

Be good at what you do. People who enjoy their jobs are more likely to have natural talent in them, but it is also important to keep improving. Attending professional development sessions, learning new and needed skills and keeping current with the literature of the field are all ways to get and remain good at what you do. The important thing is to maintain a high standard for yourself. Over time, as librarians gain a reputation for providing excellent service, word will spread and that good reputation will encourage others to use the library.

Think in the long-term. Overcoming stereotypes and establishing a consistent reputation does not happen quickly. The idea is to emphasize, over and over again, the brand you are creating for yourself. Keep in mind that you will be living with this brand for a long time. “You can’t shame or humiliate modern celebrities,” says author and modern celebrity P. J. O’Rourke in *Give War a Chance* (1992), “What used to be called shame and humiliation is now called publicity.” (p. 125). Your brand is not about “publicity” in O’Rourke’s sense, but about relationships.

Know your audience. Your brand will be seen by distinct and different audiences who may take different messages away from how you present yourself. Your brand will be shorthand used by students, instructors, colleagues, library administrators and perhaps others. While it is probably not a good idea to show a different face to each audience, it is well worth considering the message you want to send to each group and how those messages can complement each other.

Have a message. I have chosen to emphasize some aspects of my job over others in creating my personal brand. While I am a departmental liaison, I have always thought of myself as more of a generalist than a subject specialist. Looking at the needs of the remote students I work with over a distance, I have chosen to emphasize approachability and helpfulness over subject expertise. Toward that end, I consistently refer to myself as Dan the Librarian in as many venues as practicable and, whenever possible, use the phrase “save time and frustration doing research.” Both taglines are short and easy to remember. Both emphasize the salient points that I want people to know about me and they don’t get lost in my long job title or in the details of subject expertise.
Build Relationships. As anyone working with remote students will acknowledge, there is no magic bullet for reaching a remote and distributed audience. Your personal brand won’t make it easier for you to send messages to students, but it will make it easier for them to think of you when they need it. The key is consistency, quality work and a little creativity.

Distance education librarians rarely get an opportunity to work with students face-to-face. The opportunity of creating an impression is most often mediated by phone, email, chat or some other communication technology and it becomes necessary to emphasize your brand in whatever way is possible. Dan the Librarian is the name on the library services page for distance education. Dan the Librarian has a blog for distance education students. Emails to students and instructors are signed Dan the Librarian. When I have an opportunity to travel to off-site locations for library instruction, my university name badge says Dan the Librarian.

This consistency has built a word of mouth advertising campaign. Instructors and other students now tell their colleagues to “ask Dan the Librarian.” I get emails addressed to Dan the Librarian and Dan the Librarian has been asked to write a regular column in the Distance Education Department’s student newsletter. This is all anecdotal evidence and the increase in questions over the last two years cannot be assigned specifically to the Dan the Librarian campaign, but students in off-site locations seem to remember it and make use of it. I like to think that it will be easier for Jiang’s lonely student facing a glowing computer screen to remember Dan the Librarian when he or she is frustrated and in need of help.

Conclusion

Even reading many of the articles in business journals, it becomes clear that “relationship marketing” is a business interpretation of things we learned on the playground and from our parents and grandparents. Be a good friend. Be honest. Do a good day’s work. It seems almost to be a return to the values of the “good old days” (if those days really existed) where the local shopkeeper knew his customers by name.

A personal brand is also nothing really new. People make stereotypes, for good and ill, all the time about classes of people, professions, businesses and anything else that people need a shorthand reminder for. This can, of course, be inaccurate and detrimental to individuals, but stereotypes also sometimes have positive effects. While it is annoying to be thought of as fussy and rule-bound, librarians are also thought of as helpful, caring and intelligent. The personal brand is an attempt to manage or control what people think of you and magnify the positive traits. In some ways it also works to improve quality – after all, your reputation is on the line.

Ultimately, this all comes back to reputation: Overcoming a bad one; creating a better one; and leveraging yours to achieve your goals. The thank yous are awfully nice, too.
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Reaching out with LibGuides: Establishing a working set of best practices

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Abstract
With an increasing number of distance education students at New Mexico State University, the Library sought a way to strengthen the delivery of its resources and services to off-campus students. Specifically, and faced with the problem of outdated paper subject guides and infrequently updated online subject guides, the Library acquired the LibGuides platform to more efficiently meet the research and information-gathering needs of the changing student dynamic. Combining user feedback, usage statistics, information from the field, and many lessons learned from the implementation and maintenance of the LibGuides platform, a working set of best practices is presented, addressing: purpose, organization and plan; faculty involvement; audience awareness; and evaluation and assessment.

Introduction
Historically, the nature of library collections brought users into the library, where librarians were able to easily identify them and help them find the information they needed. The steady movement of library resources and other information to an online format along with the ubiquitous increase in students who take classes online has continued to challenge librarians to deliver needed information to users in an efficient and reliable format. Creating contextual and remotely accessible research help is crucial to the relevance of the library in distance education. Without the physical contact of the library, students can easily miss the off campus services that libraries provide. Additionally, students can be unaware of the role of librarians in their academic experience. When both the information and user are online, librarians need to be there, too. Online guides have played an important role in helping librarians make information available to users, specifically those who are not standing in front of them at a reference desk. Additionally, online guides have evolved from online versions of paper handouts to pathfinders to sophisticated (yet somewhat complicated) interactive sites. With the recent release of several different software programs designed to assist libraries with the creation and maintenance of modern online guides, many libraries are transitioning from traditional pathfinder-style online guides to a platform supported by one of these many software programs. Since so many libraries are embracing this new technology, it seems reasonable to begin discussing and sharing, as a profession, experiences regarding the shift to a new format of reference outreach. In this case study, the authors outline one library’s experience of choosing, adopting, and maintaining an online guide software package, LibGuides. They plan to open the discussion of the state of online guides by proposing a working set of best practices for librarians to consider and adapt as more and more libraries adopt programs like LibGuides to manage their online guides.

Literature Review
There are many case studies that outline the process and purpose of a library’s collection of subject guides, but few that focus specifically on the transition from a traditional online guide to the use of a commercial platform to support the creation and maintenance of online guides. However, there is much written about how and why libraries proceed in investigating the purpose and worth of guides.

There are several common concerns that arise when investigating online guides: the technological knowledge of librarians, and the manageability, accessibility, and currency of the guides. Both Vileno (2007) and Smith (2008) provide thorough literature reviews of the history of research guides, from bibliographies to online pathfinders to LibGuides. Each identifies common concerns specific to online guides. Smith points to manageability as a core problem. His review finds that librarians are often not
trained in authoring web pages or other back-end technologies that provide users access to guides (Smith, 2008). Vileno outlines another common concern: the sheer amount of time librarians spend authoring and editing guides, especially given that “few have reported using focus groups, surveys or usability tests in order to discover their target audience’s needs” (p. 448). Additionally, she found that in the case of electronic resources, “it is assumed that clients will use a tool, simply because it is online” (p. 442). Tchangalova and Feigley (2008) found a lack of awareness of subject guides among users, possible due to “poor promotion and visibility” (para. 2). They, too, refer to the disconnect between the large amount of time put into guides and the seeming indifference librarians have as to whether or not “users are even aware of the existence of subject guides” (Tchangalova & Feigley, 2008, para. 2). And as Arnold, Csir, Sias, and Zhang (2004) conclude, “in order for online help to be effective, it must be fully integrated into the functioning of a library’s web site and available at a user’s point of need” (p. 132). Another major concern motivating librarians to take a good look at their subject guides is the issue of currency. In Wales’ (2005) content management case study, his subject team “found that 25 percent of links were out-of-date in one printed guide alone after one year” (p. 115). Considering that many libraries’ online guides are not easily updatable, this number is alarming.

Arnold et al. (2004) outline the modern library users as people who “prefer to be independent and tend to avoid help” (p. 118). Additionally, they claim that most students “do not have general research questions” rather they “have specific needs” (p. 118). They responded by consolidating all of their online help points into one central page. Considering that users’ needs are likely to be specific, it is discouraging that Tchangalova and Feigley (2008) found that “the majority of academic libraries do not offer an explanation as to the purposes of their guides” (para. 6). Similarly, Jackson and Pellack (2004) found that only 38 percent of guides had annotations to help users figure out what each link meant in context. Therefore, it is reasonable that Reeb and Gibbons (2004) concluded that course-related guides are more effective than general subject guides. Interestingly, in Vileno’s (2007) compilation of electronic pathfinder guidelines, there is reference to scope, specifically that it should be defined. But there is no suggestion that content should be course related rather than discipline or subject related.

There have been a few studies evaluating content and format of online guides. In 2001, Dahl assessed 45 electronic guides for conformity to past suggested guidelines. She suggested several evaluation criteria for online guides: consistency, scope, readability, and use/usability. Additionally, she states that URLs are very important to include in guides. If the URL isn’t provided, then the user’s only access to a web site is through the guide. Echoing the same thoughts about the important of URL's in online guides, Jackson and Pellack (2004) found that a majority of guides did not contain URLs to the locations listed in the guides.

It is clear that more evaluation and assessment of guides is necessary. More information about the context within which students use guides is important for better practices in creating, maintaining and evaluating guides. Grays, Del Bosque, and Costello (2008) discuss their use of virtual focus groups in assessing the value of subject guides. They present best techniques and common mistakes when conducting research on subject guides. Staley (2007) notes a lack of user-centered research showing how different disciplines use guides differently. She finds a correlation between library instruction and higher use of subject guides. Reeb and Gibbons (2004) also find that context is an important factor students’ use of subject guides. They note the movement from subject guides to course/assignment guides as another argument for the importance of context in using guides.

Morris and Grimes (1999) surveyed research university libraries regarding their subject guides, finding that 70 percent had no updating schedule in place. Overall, there was no formal protocol in the selection and maintenance of resources. Less than half of the survey participants keep statistics on guide. They concluded that more time needed to be invested in maintenance of guides since "...there may be little uniformity in size, content and interface of many of the libraries' subject guides" (p. 216).

Concerning uniformity of guides, Dupuis, Ryan, and Steeves (2004) present a case study of guide creation at York University Library. They also find that organization, simplicity, and the ability to access guides from more than one access point are important aspects in effective guide creation. They found that
"...it became clear that what was needed was a number of fixed categories, along with the ability for subject librarians to create customized categories based on the individual needs of their subject" (p. 272).

Standards for guide creation are explored in several articles. Stritin (2008) reiterates the need for more than one access point for guides and the importance of consistency in guide creation. He goes on to list a set of attributes that "...will produce well-used guides" (para. 42). Among several attributes, the author lists course-specific guides, good library web site placement, and using chat to embed librarians within the guides. He also stresses context and encourages presenting guides in library instruction sessions. Brazzeal (2006) discusses guides as library instruction tools and compares elements of instructions guides with a few sets of standards including the ACRL's Information Literacy Competency Standards for Higher Education. He offers suggestions for the improvement of guides as instruction tools, but stops short of listing best practices for guide implementation.

**Background**

**NMSU Demographic**

Located in a state with a scattered population, New Mexico State University (NMSU) has a growing number of distance education programs and students. Presently, there are thirty-four distance education programs with degrees ranging from certificates to doctorates. Nine thousand of NMSU’s 17,200 FTE students take classes online (College of Extended Learning, Distance Education office, personal communication, November 15, 2009). Additionally, an increasing number of classes which are taught in a traditional face-to-face classroom supplement their coursework within the NMSU course management system. This creates an additional point of access for traditional students who are off campus and needing research help and/or library instruction. Considering the trend of students locating themselves outside of the library’s walls, the NMSU Library felt the need to facilitate better access to the Library and librarians.

**Stating the need**

Facing similar problems as other university libraries, the NMSU Library sought a method and a tool to create more effective online guides. The existing online subject guides lacked a common look and feel (categories, elements, structure and appearance), leaving a user with no indication that the guides were reliably serving a common purpose. With no template for online guides or oversight in their production or maintenance, guides were created for some areas and not for others. Updating online guides required coordinating with the staff in another department. This extra step alone seemed to be enough to deter the regular maintenance of guides, resulting in many out-of-date guides. Furthermore, the online guides were not referenced intuitively from the main library web pages, so their existence often went unnoticed. Additionally, many online subject guides were merely static HTML versions of paper subject guides and pathfinders, which the library still produced in great number despite their declining use. Keeping paper subject guides as the main format for guides seemed irrelevant and outdated. Offering out-of-date, hard-to-find online subject guides was no better. A new approach was needed.

**Choosing LibGuides**

Although there are other software packages and open source products that facilitate in the creation of online guides, such as SubjectsPlus and LibData, LibGuides was the best fit for the NMSU Library. LibGuides is a software application that creates a way to collect knowledge and present information in an organized manner. LibGuides has a tab based structure with a variety of boxes and columns available to create content in many different formats. Web 2.0 technologies such as RSS feeds, IM widgets, and social networking applications are integrated into the LibGuides platform creating a more participatory setting than traditional online guides. Through LibGuides, online guides can be linked to from appropriate pages within the larger library web site and from within course management systems.

LibGuides offered solutions to the library’s specific issues and concerns. Since most of the people that would be using the product were not experienced with web design software or HTML, the ease of creation and incorporation of Web 2.0 elements was seen as one of LibGuides’ main benefits. The overall
navigation would help to address the present organizational and linking problems. The option for the remote hosting of LibGuides was ideal for the library and especially the systems department, which at the time was focusing on a major renovation of the library web site architecture and the implementation of a federated search tool. Additionally, a perceived benefit to selecting LibGuides was the larger LibGuides community, where nearly 1,000 libraries share over 58,000 guides and use different universities’ guides as templates for creating their own guides (Springshare, Inc., 2009). The LibGuides community offered a simple way to learn from what others in the LibGuides community were doing. LibGuides had the interactive quality and user friendliness that facilitate the creation user-centered guides that would meet the needs of on and off campus users simultaneously.

**Planning**

Initially, the LibGuides project was a way for the library to reach all students, both on and off campus. Since the product was originally being trialed for a year, planning was crucial.

**Establishing leadership**

For the success of the renovation of the online guides, structured leadership was necessary. At the onset of the project, it was not entirely clear what type or how much leadership would be appropriate or necessary. The reference coordinator and the instruction coordinator were selected as project leaders due to their leadership roles in reference and outreach. Although the coordinator positions were positions of leadership, the coordinators themselves were not supervisors in the library. Considering this, assuming a leadership role required a great deal of team work and patience. Eventually, project leaders learned to successfully and diplomatically guide the project. Still, discussions and questions concerning the roles and responsibilities of project leaders continue to surface as the project evolves. Defining the role of a project leader is an important decision and requires complex consideration.

**Administrative buy-in**

From the beginning, project leaders knew that buy-in from the entire library staff was necessary to support the LibGuides project. The first level of buy-in necessary was at the administrative level. Through the initial trial period, project leaders demonstrated to administration that this effort to reach students off campus was pressing. Reaching off-campus students was an issue that concerned library administration. The creation of new guides and improvement of existing guides presented a logical solution. Additionally, a successful demonstration of LibGuides was presented to the library’s administrators. Department heads were impressed with the versatility of the product and began to see possible use of guides across departments.

Moreover, subject specialist participation was crucial to the success of the project. Project leaders knew that managing the work load with as many dedicated librarians as possible would be most advantageous. Librarians needed to be sold on the concept of reformatting all existing guides and creating new guides. Librarians were generally dissatisfied with the non-standardized appearance of the existing guides but many librarians had invested a considerable amount of time creating them. After a demonstration, librarians were convinced that the time spent creating the existing guides was not an accurate estimate of the time they would need to dedicate to renovating guides using the LibGuides platform. An additional level of support was necessary as project leaders began to realize that including support staff and students in the project might be necessary to mitigate the amount of time that librarians were to invest in the project. By achieving a high level of dedication, a strong foundation and high expectations for the project were established.

**Creating a template**

In order to prepare for training, the project leaders created a handful of subject guides on the LibGuides platform. Soon after, they created a template guide (see Figure 1). The original purpose of the template guide was to save the time of the future guide authors by providing a set of fill-in-the-blank sections. A template also provides a consistent look and feel, which has been identified by users as
important (Dupuis, et al., 2004). Additionally, the template provided a place to showcase all of the different types of boxes that are available to authors to enhance the user experience. The template quickly became a promotional and assistive tool. It was invaluable during the initial training sessions as it allowed librarians to all work on a similar looking guide at the same time. Additionally, the template allowed students to become involved in helping to transfer information from the existing guides to the new LibGuides platform without having to make formatting decisions on behalf of a librarian. Later in the project, unfortunately, the template was misunderstood to be a rigid guideline for the format of a typical subject guide. The template was created to assist librarians as they learned their way around the LibGuides platform, but it was then taken very literally and proved to squash a good deal of potential creativity in the first set of LibGuides that were published. In fact, librarians were surprised to hear that they didn’t have to use the template when creating new online guides.

Figure 1. Template guide.

Execution

The combination of administrative support, a leadership structure for the project, and a working template for the new set of online guides allowed the project to move from the planning phase to the execution phase.

Training

With just a one-year administrative commitment to the LibGuides platform, it was originally thought to be imperative to create a full new set of online guides (to replace the full set of existing online and paper guides). If the LibGuides platform became essential, then administrative commitment was likely to continue. However, if the project lagged and was seen to be of peripheral interest and importance to librarians, then continued approval of funding would be harder to secure from administration. Asking librarians to essentially redo all existing guides is asking for a serious commitment of time and energy. However, motivation was not a significant barrier since most librarians were well aware that the existing
online guides were in need of an overhaul. Additionally, the mere idea of a system that could meet common challenges provided interest.

With the template and a handful of first-draft guides, training sessions for librarians began. The first session was held at the beginning of the fall semester, before classes began. Librarians were encouraged by department heads to attend the training session which included time to create a first guide. This allowed for the project leaders to troubleshoot common problems that guide authors encountered and provide individual hands-on help. The initial request of subject specialists was to create one guide each by the end of the semester. The goal was set intentionally low in order not to overwhelm librarians with yet another task, especially before they were familiar with the software.

After the initial training session, project leaders provided any support that was requested, including individual training sessions, editing, and training staff and students to help with the mass transfer of information from existing online guides and paper handouts to the LibGuides platform. Training continued as needed throughout the semester and at the end of the semester, another workshop was offered so that librarians could ask specific questions; share successes, ideas, and setbacks; and, ideally, complete the guides they planned to publish by the end of the semester.

By December, 39 guides were published. This success was recognized and the library signed a three-year contract with LibGuides. This increase in commitment to LibGuides provided librarians with the motivation to continue publishing guides and familiarizing themselves with the intricacies of the LibGuides platform.

**Placement**

With the creation of guides well underway, placement would be important to the project's overall success. If users were not able to locate the guides, the quality and number of guides would be irrelevant. In her analysis of successful elements of electronic pathfinders, Dahl (2001) finds that a “direct path [to the pathfinders] is necessary” (p. 237). With a library web site redesign happening simultaneously, an opportunity to negotiate a strategic placement of the guides was available. The project leaders pushed for home page-level linking but were offered a reasonable compromise: a second-tier “Research Guides and Help” page (see Figure 2).
Users are able to access the library’s guides within two clicks of the library’s homepage. Additionally, users can be directed into the LibGuides platform at specific organizational points. For example, users can link directly to a list of the course/assignment guides or directly to a list of general subject guides. This navigational assistance was seen as important since the LibGuides pages are so different in look and feel from the rest of the library’s web pages (see Figure 3).
Naming

While attempting to place the guides in a logical location on the library's web site, another major question arose: what would the guides be called? Since the introduction of the software, most librarians referred to the guides themselves as "LibGuides". Although the term LibGuides was understood by librarians, the term means nothing to users. Of course, the debate became even more complicated by the fact that throughout the semester, it became clear that LibGuides would be used to create more than just subject guides. LibGuides was proving to be an ideal platform for all types of guides, including course, assignment, and current event-specific guides.

Would referring to subject guides as LibGuides be just as unhelpful to users as an obscure placement on the web site would be? Reeb and Gibbons (2004) discuss Jared Spool's theory about "trigger words" for library web links. In their study, they surveyed students at Bucknell to suggest names for their subject guides. According to the authors, "The student's suggestions reflected not what the subject guides are, but what they do" (p. 127). Project leaders knew that the branding of the guides was an important factor in guide success and polled reference librarians for naming suggestions. Among the proposed names were: Subject Guides, Research Guides, Research Help, and Help Finding Information. The reference librarians, as a group, couldn't come to a consensus on what to call the guides. After much discussion, there was still disagreement on what term to use, although the term "LibGuides" was always excluded. The decision was made to call them "Research Guides". Finally, we named the link from the homepage, "Research Guides and Help".

Unfortunately, the delay in naming the guides within the library has led to some confusion with the branding of the guides. Within the library, the guides are always referred to as LibGuides. Reference and instruction librarians then refer to the guides as LibGuides to users, creating a term without practical meaning.
Benefits

Faculty collaboration

During implementation, it became overwhelmingly clear that course-specific and assignment-specific guides were being accessed much more than general subject guides. This wasn’t completely surprising, considering that Reeb and Gibbons concluded in 2004 that students, generally, have no idea what subject guides are. In Fall 2008, the first semester that LibGuides were available to NMSU users, the guide created as a supplement to a first-year business class assignment received more hits than all 26 subject guides combined. In hindsight it seems obvious, but it was exciting to encounter a new opportunity for collaborating with faculty. Additionally, seeing that students were indeed using online resources that were created specifically for them helped to justify the amount of time spent creating the resource.

Using the LibGuides platform, guides can be created, updated, and changed relatively quickly. Since creating guides was becoming much less burdensome for librarians, they are able to create guides to meet specific, and often changing, needs of students and faculty. Without any input from faculty besides a syllabus or assignment, course/assignment guides can be created, shared, and used to open the door to future partnerships. These guides provide faculty with a vetted, organized set of tools to provide to their students. Because they reflect the current semester, students interact with resources that they perceive to be current and relevant. Students can spend more time becoming familiar with appropriate resources and less time overwhelmed by the vast array of resources available on any given topic. For students, the course/assignment guides not only serve a useful purpose, but, as Kerico and Hudson (2008) point out, they also “help reinforce the librarian’s role and importance in the educational process” (p. 40).

As faculty began to see the benefit of guides tailored to their students’ immediate, specific needs, they simultaneously began to request guides for their other classes. Additionally, they became more involved, offering suggestions and asking for certain elements to be included or excluded. Using course/assignment guides to collaborate with faculty also provided a much needed, built-in marketing device. Guides created for courses or assignments often were introduced to students via instruction session, both in-person and distance. Since faculty most likely requested the guide, they were then embedded into the course management software and students were reminded to use them. Without a true marketing plan in place, these guides then provide a direct conduit to the primary users: students. Additionally, the perceived success of the course/assignment guides caused faculty to market the service to other teaching faculty. In the fall semester of 2008, there were five course/assignment guides. One year later, there were 33 course/assignment guides. Moreover, 83 percent of the instruction sessions during the Fall 2009 semester were supplemented with a course/assignment guide.

Student involvement

Once the project was well underway, librarians indicated that they were comfortable with student workers assisting in the development of the base set of guides. Students were tasked with transferring content from existing guides into the LibGuides platform. Once content was added, the editorial rights were passed to the appropriate librarian to edit as necessary. Student involvement expedited the process of creating a full complement of subject guides. Additionally, students systematically browsed the guides, checking for missing links and other potential problems. Students benefitted from this process by becoming more familiar with library resources via the guides. Since students were responsible for communicating guide problems to librarians, they were able to interact with subject specialists and familiarize themselves with the librarians’ respective expertise. Consistent and thorough maintenance of the guides would be next to impossible without the students’ help.

The guides also served as a training tool for student workers at service desks. Students learned to rely on the guides to assist users. Students could look at guides to address questions that arose from popular assignments and courses. Guides also gave students a quick way to find subject specialist information when referring more complex questions to librarians. Guides became beneficial in instructing student workers as well as users.
Real-time feedback

Given the amount of concern expressed in the literature regarding the absence of knowledge about users’ needs and interest in online guides and given the short time frame with which to show the success over the overall LibGuides project, the built-in statistics mechanisms were incredibly useful (see Figure 4). Project leaders were able to see, at a glance, how many and which guides were published and in progress. Since a first goal of the project was to create a full set of subject guides, these snapshots helped direct resources, such as student help, appropriately.

![Figure 4. LibGuides system summary statistics](image)

By the second month of the project, individual guide statistics showed that subject guides were getting little use, but other guides were receiving high traffic. Again, the guide created to supplement the first-year business class assignment was the most popular by far. In October, when the assignment is due, the guide was visited 2893 times. Interestingly, there were fewer questions at the reference desk than in past semesters concerning this assignment, indicating that students are using the library whether or not we see them doing it. Another guide, unrelated to NMSU, was also quite popular. With the 2008 presidential election upcoming, one of the reference librarians created an Election 2008 guide which was viewed 1264 times in October 2008, more than any individual subject guide was viewed over the entire semester. These individual guide numbers indicated that users were coming by guides with specific interests.

Because feedback can be gathered directly from users via the LibGuides platform, librarians can address user input in real-time. Also, users are able to access the reference desk from anywhere within the guides. This provides a particularly useful placement for and marketing of the Meebo chat widget, which is the Library’s virtual reference tool.

LibGuides meets many needs

In addition to providing an easy to use platform for subject, course, and assignment guides, LibGuides has provided a platform for hosting and disseminating many different collections of information. Twenty-one percent of NMSU's LibGuides are neither subject guides nor course/assignment guides. The LibGuides platform has allowed librarians to present collections of information easily and this ability has encouraged both creativity and functionality. For example, there are LibGuides promoting...
library exhibits, outlining NMSU’s commitment to the Year of Sustainability, and providing information for military families. On the other hand, the LibGuides platform has been used to create a holding place for all of the library’s print handouts and a portal to the library’s online reference collection. And since LibGuides can be printed, this has proven very useful to users who prefer handouts to online guides.

**Challenges**

**Funding**

When using a commercial product, securing ongoing funding is almost always a challenge. However, it would be relatively simple to quantify the time-saving benefit of using a commercial product. The usage statistics collected by LibGuides provide data that are necessary when communicating the value of the product to administrators. LibGuides is no longer seen as a peripheral or optional product at the NMSU Library; rather it has been absorbed into the Library’s online interface and workflow and is rarely noticed as a financial extra.

**Participation**

Asking librarians to completely revise an entire set of online guides is a tall order. Any conversion is front-loaded in terms of time investment. Even if everyone is on board with the project, training can be cumbersome and maintenance is ongoing. Not all librarians participated in the first phase of the project. However, after it was clear that LibGuides was a long-term commitment, all librarians began publishing guides. An upcoming goal is to have an online guide for every library instruction session. Considering that 83 percent of sessions were supplemented with a course and/or assignment guide in Fall 2008, it is clear that librarians see the guides as a useful tool and are able to create them in short order.

**Template**

The most significant ongoing challenge stems from attempting to provide librarians with a reliable set of time saving tools. In its first iteration, this set of tools was made available via the template guide. However, the template guide was too restrictive and was stifling the creativity of the authors and the potential uniqueness of the individual guides.

Presently, the project leaders maintain a master guide, which is available privately (and therefore is only available via direct link) to librarians. The master guide (see Figure 5) is a large collection of content boxes that are likely to be useful in more than one guide. For example, there is a “Contact Us” box. Instead of individual guide authors creating contact information every time a new guide is created, the “Contact Us” box can be linked to from any number of guides. This saves the time of the author and, as important, it allows for global changes to be made. If the library’s contact information changes, the information can be changed in the master guide and will be reflected in all of the guides that have linked to it.
Marketing

Finding users and connecting them to the information they need is a permanent challenge for librarians. The project leaders did not develop a plan for marketing the guides to potential users. When looking at usage of subject guides, it is clear that they receive little attention.

However, the other guides marketed themselves. Most course and assignment guides are requested and supported by teaching faculty. In nearly all cases, the guide was created as a supplement to an instruction session. Therefore, the students are introduced to the guides in context, and the guides are seen as relevant and helpful. Many course and assignment guides are included in the class learning management system. Again, this puts the resource where the student is.

Assessment

Assessing guides has always been problematic. As Courtois, Higgins, & Kapur (2005) point out, we know very little about user satisfaction with subject guides. Justifying the time and creative investment, however, is important for buy-in and for the overall success of a comprehensive and ongoing guide project. The simplest assessment of LibGuides, and for which the data is compiled automatically, is performed by tracking use. This is a crude measure, but one that can guide the allocation of effort, especially if there is an initial push for quantity. For example, librarians at NMSU learned early that general subject guides were not getting much use but course and assignment guides were accessed hundreds, even thousands of times more often. Immediately, priority was shifted from creating a detailed guide for every department to creating a guide for every instruction session.

After librarians became comfortable with the new format for guides, the shift in assessment went from looking at use to looking as student perception and success using the guides. Presently, there are two research projects in progress: one is looking at whether or not assignment guides are effective enough to replace instruction sessions and the other is looking at whether students have a preference for the format of research guides.
Maintenance

Internally, the assessment of guides is done primarily by project leaders in the form of collection maintenance. Most comments and concerns regarding the guides are forwarded to the leaders. Some have been moved to an unpublished status due to incompleteness and lack of organization. Presently, there are no policies or procedures that dictate who can and cannot publish or unpublish a guide. The ease of use of the LibGuides platform has led to a plethora of guides, organized in a variety of different ways, serving a variety of purposes. It will remain important to keep the integrity and purpose of the collection at the forefront of the project as it continues.

Additionally, an inventory of all guides is kept and maintained by student workers. This list matches guides to departments, identifies guides as temporary or permanent, and allows editors to anticipate needed updates.

Conclusion

The LibGuides project at the NMSU Library is considered a success. However, it is clear to all involved that is an ongoing process that requires consistent attention and maintenance. As the Library moves forward, it will be essential to continue measuring the quality and usefulness of the guides through regular assessment. With the exception of two focused research projects, all assessment of the guides has been top-down. The next step will be to solicit and analyze user feedback.

Since there is no cap on the number of guides that can be created by an institution, there is a tendency to create a guide for any and every situation. And while this attitude benefits the overall completeness of the collection, it can lead back to the same types of problems that initiated the LibGuides project. For this reason, oversight of the project will remain important to its success.

Considering that libraries are likely at many different stages in the process of choosing, implementing, creating, and maintain online guides, the authors have compiled a working set of best practices based on both the literature and the general experiences at the NMSU Library (see Appendix). This list is meant to be a starting point for discussion as more and more libraries face the transition from static to dynamic guides.

All in all, the transition from traditional online guides to a commercially hosted solution worked to address the needs of the NMSU Library. As with all library projects, a continued focus on the user experience is necessary to guide the future direction of this project.
References


Appendix

LibGuides Best Practices
New Mexico State University Library

Throughout the process of transferring online guides to the LibGuides platform, the project leaders kept a working list of best practices taking into consideration all the challenges, benefits, and lessons encountered. Access to the NMSU Library’s collection of guides is at: http://libguides.nmsu.edu.

Purpose, Organization, Planning

- Articulate problems with current situation and be specific in identifying specific organization needs.
- Establish buy-in with involved parties (administration, reference department, systems department, etc.).
- Plan for dissemination both internally (e.g. training) and externally (e.g. placement, naming, and marketing).

Audience awareness

- Make guides accessible to users at their point of need and point of access (e.g. course management systems).
- Use guides consistently in library instruction and in reference transactions.
- Create a consistent look and feel.

Evaluation and assessment

- Monitor the use of guides.
- Create a policy for adding/deleting guides.
- Solicit user feedback.
- Create an assessment plan.
- Share assessment with involved parties (administration, reference department, systems department, etc.).

Faculty collaboration

- Collect syllabi and create course/assignment guides.
- Use guides as basis for communication and collaboration.
- Embed links to guides in course management systems.

Maintenance

- Use available resources (e.g. student workers)
- Maintain an inventory of guides.
- Identify long-term editors who will oversee the entire collection of guides.
The “Just for Me” Virtual Library: Enhancing an Embedded eBrarian Program

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Abstract
In recent years, Bucks County (PA) Community College revised its information literacy (IL) program to integrate into the College’s curriculum for a learning-centered experience. At first, however, this program had no presence in the College’s growing online learning initiative. A way needed to be found to not only bring IL instruction into the virtual classroom, but to make it a “just for me” experience of library instruction, resources and services, relevant for each online student. This need led to the creation and continued enhancement of the College’s Embedded eBrarian program, which, aside from embedding librarians in the College’s course management system, now includes current and emerging technologies that engage and involve students.

Introduction
The three campuses of Bucks County Community College (BCCC), founded in 1964, sit among the rolling hills of Bucks County, Pennsylvania. With a current full-time enrollment (FTE) of approximately 8,000, the College’s emphasis is on teaching and learning rather than on the faculty research and tenure that influence students’ experiences at many four-year institutions. Information Literacy (IL) instruction has long been a part of the College’s learning experience, and in 2007 the Library initiated a successful plan to convert its teaching-centered bibliographic instruction (BI) activities into a learning-centered IL program.

The College’s online learning program began in the early 1990s and quickly became an example of quality online programming. “All stakeholders agreed early on that the quality of online learning must be comparable to that of traditional classes” (McCreddie, 2008, p. 13), and so both eLearning and hybrid classes have followed the same syllabi as their face-to-face equivalents, and all eLearning classes are taught and administered by faculty and staff who also work in the face-to-face realm. Online support for eLearning, such as tutoring services, technology help, course space assistance, and instructional design services, as well as library services and resources, are centrally available through the College’s Learning Resources Department. Convenience, effectiveness, and economic realities have made BCCC’s extensive online learning opportunities increasingly popular: online enrollment in Fall 2009 was 3,619 seats, an increase of nearly 35% over Fall 2008.

Yet until recently, the College’s otherwise pervasive IL program had no presence in the College’s online learning classes. A way needed to be found to not only bring IL instruction into the virtual classroom, but to make the experience “comparable to that of traditional classes;” in essence, to provide a “just for me” experience of library instruction, resources and services for every online student. This need led to the creation and continued enhancement of Bucks County Community College’s Embedded eBrarian program.

Information Literacy at Bucks County Community College
Prior to 2007, IL instruction at BCCC’s three libraries (one on the main campus and one at each of the two extension sites), although extensively utilized by classroom faculty, consisted mainly of individual “one-shot” bibliographic instruction sessions with little continuity. It was a teaching-centered environment, often extremely general in nature and not well integrated into the students’ course work. The Library offered no IL instruction to the growing number of online courses. IL was, however, already integrated into the institution’s curriculum as a Core Assessment (general education) subcategory. In order to prepare...
students for a constantly-evolving information age, the IL experience at the College had to move from a teaching-centered model to a learning-centered one. “Personal, interior experiences of information are fundamental to a vital information literacy that can make a difference in our lives and the world” (Ward, 2006, p. 397). A new, energetic Dean of Learning Resources and a newly-appointed Information Literacy Librarian helped this shift to happen.

The IL Librarian attended the Association of College and Research Libraries’ (ACRL’s) 2007 Information Literacy Immersion Institute in Winnipeg, Manitoba, Canada. During this intensive week-long program, she was charged with creating an Information Literacy Action Plan that would tie the College’s various IL activities together into an information literacy program. This action plan focused on the move from teaching-centered Bibliographic Instruction sessions to a learning-centered IL program. A definition and mission statement were incorporated into this Action Plan:

INFORMATION LITERACY DEFINITION: Learners in all situations receive and process information in many different ways. Therefore, information literacy is the finding of information in the myriad sources available to the learner, the learner’s evaluation of information as relevant, appropriate, and credible for the task at hand, and the learner’s ethical use of the new information. Ideally, classroom faculty and librarians collaborate to guide learners to these skills and strategies. (Bucks County Community College Library, 2009)

MISSION STATEMENT: The mission of the Bucks County Community College Library’s Information Literacy program is to collaborate with classroom faculty to teach students how to find, retrieve, evaluate, and use information ethically and efficiently for success in their courses and as lifelong learners. (Bucks County Community College Library, 2009)

As part of the move toward an IL program, some changes were made in the Library’s teaching protocol. Frand (2000), in one of the many required readings for the ACRL Immersion Program, advises that “Students with an information-age mindset expect education to emphasize the learning process more than a canon of knowledge” (p. 24). Inspired by this concept, Bucks County Community College’s teaching-centered library instruction evolved into a learning-centered experience. First, professors are now required to forward to the librarian an assignment that the students will be working on at the time of their IL session. The librarian will relate the session content to the assignment, thus integrating IL seamlessly into the course. Second, professors are encouraged to bring their students to the Library for multiple sessions. These sessions are sometimes briefer than previous bibliographic instruction sessions, incorporating time for hands-on practice. There is an increased awareness that students do not share the same learning style; some learn best by listening, some by watching a projected image, and some by practicing the new skills hands-on with the computer in front of them.

Third, librarians are required to customize their presentations for the level and type of class and teach to the specific assignment. They are not under any circumstances to present the sort of general instruction session that can so easily turn into an “information dump.” The emphasis is on the students’ learning and not the librarian’s teaching of multiple sources and skills that may or may not be appropriate. In order to facilitate the shift from teaching-centered instruction to a learning-centered experience, librarians are encouraged to state the learning outcomes (learning-centered) at the beginning of the session, and not what they plan to cover (teaching-centered); the purpose of the IL session would not otherwise be clear to students.

Fourth, some courses are to have standard formats and assignments created by their departments, incorporating a specific slice of the whole IL experience. Library faculty play a key role in collaborating with the various academic departments on these assignments. At Bucks County Community College, the face-to-face English Composition and Effective Speaking courses are standardized to ensure that students taking these required courses receive a similar experience. The developmental courses were also revised to provide a standard IL experience. It was further planned that as students branch out into other fields of study and become more advanced learners, they will receive appropriate IL instruction for those disciplines and levels incorporating current technologies. Ward (2006) clarifies the desired outcome: “Information
literacy is not a static and limited idea, but a dynamic concept that continues to grow to incorporate a larger set of skills essential for a life of meaning in an information era” (p. 398).

The IL Librarian would also offer professional development to the classroom faculty in a number of ways. The Information Literacy Institute, a three-day program created in 2007 and team-taught by the IL Librarian and a psychology professor, guides participating faculty through the process of creating a practical, information-literacy-rich assignment that they can use in their courses. They become acquainted with the different aspects of IL, learning styles, student perspectives, and the Library’s offerings. As the liaison to the Core Assessment team, the IL Librarian works as a consultant for faculty preparing assignments for courses with IL responsibilities. In addition to these official duties, the IL Librarian speaks frequently at the College’s in-house professional development forums, consortium programs, and national and international conferences.

BCCC’s IL program became a vital, learning-centered experience embedded into the College’s curriculum, offering what Ward (2006) calls “robust information literacy instruction” (p. 399), but this only highlighted the fact that there was no comparable IL presence in the College’s burgeoning online learning community. A way needed to be found to match “the appropriate use of technology with the content, the instructor’s personal style, and the students’ learning style” (Frand, 2000, p. 24) in this electronic learning environment.

The Pilot Project

Collaboration was forged between the College’s Information Literacy Librarian and the Online Learning Librarian. It was decided to conduct a pilot project during the Spring 2008 semester to determine the most effective means of integrating the College’s IL program into its online courses. The model chosen for the pilot was that of the Community College of Vermont, which conducted a successful program to provide centralized virtual instruction to its 12 campuses and its rapidly-expanding number of online classes (Matthew & Schroeder, 2006). As with the Vermont model, the BCCC pilot was built on two primary elements: a dedicated library research discussion topic in the online course space, moderated by an embedded librarian, and web tutorials targeting the specific course assignment. To that end the library faculty involved in the project worked closely with Online Learning staff to become familiar with Web CT, the College’s course management system at that time, and investigated screen-capture video software.

In search of a member of the classroom faculty with whom to collaborate on the pilot, the librarians approached the psychology professor who helped to create the College’s Information Literacy Institute and who routinely incorporates IL instruction into his face-to-face courses. He was eager to work with the Library on this project and suggested that the librarians embed in an online version of an Introduction to Psychology class with which the librarians were already familiar from its face-to-face incarnation.

For the research assignment, the students were asked to use EBSCOhost’s Academic Search Elite database to locate an article that gave advice on some topic in psychology from a general-interest magazine and cited scientific research, and to write an evaluation of the article that included an APA-formatted reference for the article. An additional consideration for the librarians was that this course was commonly taken by first-year students who frequently had not yet had any college-level IL instruction.

Adobe Captivate was selected as the software for the first tutorials, due to its ease of use by those unfamiliar with screen-capture video technology, and for the ability to easily incorporate PowerPoint slides into a video. It was determined that three tutorials would be needed for this course: an introduction to navigating the Library’s website, guidance in the selection of effective search terms, and instruction in searching for and retrieving articles in Academic Search Elite and using the database to generate an APA-formatted reference. A combination of screen-capture with captioning, PowerPoint slides, and audio narration was used to create videos that considered the needs of sight- or hearing-impaired students. The videos were published as Flash (SWF) files and placed on the Library’s server, initially without links from the Library’s website.
The course instructor had the librarians added to the course’s Web CT space as teaching assistants; this status allowed the librarians to create a discussion topic and post web links without having full “build” privileges in the course space. The librarians posted links to the three tutorials on the Web Links page of the course space, and created a Library Research discussion topic, including a welcome message in which the librarians introduced themselves, provided additional links to the tutorials, and encouraged the students to post questions to the discussion. Although the course instructor was under no obligation to monitor the library discussion, he was invited to post to it if he felt it was appropriate. The librarians made it clear that they would monitor only the library discussion. They monitored the discussion topic from the day the assignment was introduced to the students, until a few days after the assignment’s due date, a period of approximately three weeks. The course space was checked several times a day, including Saturday and Sunday, for discussion postings.

No formal means of assessment was designed, but some assessment was accomplished through monitoring of the discussion topic, the gathering of statistics on usage of the links to the tutorials, and verbal communication with the course instructor regarding the quality of the submissions. The following results presented themselves:

- No students posted to the discussion. No definite reason for this was determined.
- The students only viewed the tutorials that they felt they needed to fulfill the assignment. The Academic Search Elite tutorial was linked to 24 times by the 30-student class, the search term tutorial 17 times, and the website introduction only seven times.
- The instructor was pleased with the quality of the submissions and believed that the IL component of the course contributed to student success. Because of the lack of use of the discussion topic, however, he wondered if that element of the project was unnecessary and if the tutorials alone might be sufficient.

The Embedded eBrarian Program: Year One

Pleased with the outcome of the pilot, the Library formally inaugurated its Embedded eBrarian Program in the Summer of 2008. The same librarians embedded in the same Introduction to Psychology course, using the same two-element structure as before; the librarians chose to try the discussion topic a second time to see if the results would be different. The tutorial use and submission success results were similar the second time but there was traffic in the discussion topic, with students asking research-related questions. This convinced the course instructor that the discussion topic was a useful part of the IL component of the course, even if it would sometimes not be used. For the first year of the program the structure of each component remained the same: the dedicated discussion topic and the assignment-specific Web tutorials with links posted in the course space. Librarians were embedded in the following online courses:

- Summer 2008: Effective Speaking, Introduction to Drama, Introduction to Psychology.
- Fall 2008: English Composition 1, Introduction to Psychology.
- Spring 2009: English Composition 2 (two sections), Integration of Knowledge, Introduction to Psychology.

As the program was initiated, some staffing concerns became apparent. The amount and nature of time involved in monitoring online courses precluded the use of part-time library faculty as Embedded eBrarians. However, part-time librarians could be utilized to create new tutorials. Therefore full-time librarians served as the Embedded eBrarians and monitored the discussions, and subsequent tutorials have been created mostly by part-time librarians. Summer courses have been better served by having two librarians embedded, to assure continuous coverage during vacations. To date this has proven to be a workable system: the program has not overtaxed the commitments of three full-time librarians, and several
part-time and a few other full-time librarians have eagerly volunteered to create tutorials; most were unfamiliar with Adobe Captivate but found it easy to learn.

During this first year the program coordinators made many other discoveries that led to improvements in the quality of service:

**Tutorials often need updating.** It was quickly realized that the Web tutorials should serve as learning objects (IEEE Learning Technology Standards Committee, 2005), useful for future online and non-online classes. This presented some challenges, however, one of which is the sometimes frequent need for updating. For example, shortly after the initial use of the first three BCCC tutorials, the College website, the Library website, and the EBSCOhost interface all underwent major revisions, necessitating significant updates to two of the three tutorials. Although updating videos with Adobe Captivate is technically straightforward as long as the original Captivate file is retained after publication of the video, this places a significant burden on the time of the librarians. Moreover, once a particular librarian has created a tutorial, which includes that librarian’s own voice as narrator, it requires even more work to update the tutorial if the librarian has left his or her position and another librarian needs to be assigned.

**Thinking of tutorials as learning objects.** The original EBSCOhost tutorial included instruction on APA formatting as well as searching for and retrieving documents. Although this made the tutorial ideal for the original assignment, it made it less useful as a learning object because a portion of it was irrelevant to future students who would only need instruction in search and retrieval, students who only required instruction in generating a formatted reference, or students who needed help with some formatting style other than APA. Greater foresight needed to be applied to future tutorials.

**Other technological considerations.** Most of the subsequent tutorials were created by part-time librarians, who for the most part do not have their own workstations and work exclusively at reference desks, mostly at quieter extension sites. Adobe Captivate was installed at these reference desk workstations, but audio recording conditions are not ideal and it is sometimes challenging for the librarians to record narration.

The College upgraded its course management system to Blackboard Vista during the winter of 2009. Differences between CE6 and Bb Vista were largely minor and did not affect any of the functions that were being used for the Embedded eBrarian program.

**Some course instructors may be uncomfortable with teaching assistant status for librarians.** This has not been encountered often, but when it has been it has not impeded library services to these classes. The librarian is placed in the course space as a student rather than as a teaching assistant, which still allows the librarian to moderate the discussion; in this case, however, the course instructor must create the discussion topic and post the links to the tutorials.

In one instance the opposite situation provided a challenge. A librarian was placed in a course space with full course instructor/course designer privileges. This allows the greatest number of options for contributing to the course (for example this is the only status that will allow the librarian to post content on the main page of the course space), but it also means that the librarian will receive every student email that is sent to “all course instructors,” and rarely are these messages relevant to the librarian’s role in the course.

**Unforeseen opportunities.** As with any face-to-face course, no course content can be completely planned in advance. It was realized early on that some students were more comfortable using the email function of the course space to ask research questions rather than the more public forum of the discussion topic, so although the librarians continued to encourage use of the discussion, they also incorporated checking of their email into their Embedded eBrarian routines.

In one course, after the submission date of the assignment that the Embedded eBrarian component had been designed for, the course instructor unexpectedly encouraged the students to seek research help for another assignment. The librarian quickly posted some advice to the discussion, and created a page on Delicious.com that brought together recommended Web resources.
Another opportunity seized on by the librarians in the first year was that of introducing themselves in the course space’s roster. They uploaded photos of themselves and posted colloquial information about their backgrounds and work responsibilities, in an attempt to make themselves more accessible and engaging to their online students.

**Instructors will be requesting Embedded eBrarian Services.** Through the first summer of the program, all of the course instructors involved were initially solicited by the librarians, but as the program quickly became known to the classroom faculty a means needed to be found for instructors to formally request Embedded eBrarian services. The Library already made use of a PHP-coded online form for faculty to request face-to-face IL instruction, so a new, similar form was created for online instruction requests and posted on the Library’s website.

**Accessibility of Learning objects to all faculty.** As word of the program spread, face-to-face classroom faculty became aware of the Library’s tutorials and wanted to use them in their classes. Initially the only links to the tutorials were in the specific online course spaces that had requested them, so a page was created on the Library’s website that provided links to all of the existing tutorials (http://www.bucks.edu/library/infolit/tutorials.php). The librarians also found that elements of their Embedded eBrarian classes, such as the tutorials and Delicious.com pages, were useful in their face-to-face IL instruction.

**Year Two: Providing “Just for Me” IL Instruction**

Requests for Embedded eBrarian presence in online courses have increased in the program’s second year. To date (December 2009) the following courses have had Embedded eBrarian components:

- Summer 2009: Effective Speaking (two sections), Introduction to Psychology.
- Fall 2009: Effective Speaking (two sections), English Composition 2, Integration of Knowledge (two sections), Introduction to Psychology.

During this year, responding to the challenges and lessons learned from Year One, the librarians brought additional learning technologies into their Embedded eBrarian content in order to further engage the online students and to create an IL instruction experience tailored not only to the specific course and assignment, but one that encourages each student to construct her or his own individual IL experience, based the student’s specific knowledge and need.

Although existing Library presence in the course space was effective, it was recognized that the means of presenting Library resources and services were somewhat perfunctory, incomplete, and although considerate of both the user and the library system, little considered the student’s experience of connecting with the Library. A means needed to be found of collocating and augmenting the library content in a way that would provide a virtual experience of the Library that encouraged individual search strategy generation in each student. As Hemmig writes in developing a new model for research guide design, “It is the user’s formative experience of the information service that is the central issue of research guide design, as it is of library instruction in general” (Hemmig, 2005, p. 83). The objective, the librarians recognized, was to create a presence in the course space that would serve as an engaging “interaction or communication point between the user and the information service” (Hemmig, 2005, p. 80), and this meant providing a “just for me” interface between the Library and the student. As Kuhlthau and Tama describe it, “‘Just for me’ ... provide[s] personal information mediation. ‘Just for me’ services and systems would be grounded in a clear understanding of an individual’s work, the different types of information needed and the range of access required to accomplish a variety of tasks” (Kuhlthau & Tama, 2001, p. 42).

To that end, during the summer of 2009 the Library became a subscriber to Springshare’s LibGuides, the remotely-hosted electronic content management system for distributing library resources and services (Springshare, 2009). A fast-growing number of libraries have used LibGuides as an easy and effective way to create electronic research guides (Moses & Richard, 2008; Judd & Montgomery, 2009),
and the Bucks librarians recognized in this system a facile means of providing a virtual library experience that each student could use as he or she needed.

LibGuides offer great flexibility in design and personalization and ease of construction. Relying heavily on the concept of the Learning Object, each LibGuide is constructed from a variety of content boxes that can contain text, images, links, widgets and embedded media. Boxes or even entire guides can be copied or adapted from other of the institution’s guides or from the guides of other institutions. Although some basic knowledge of coding is helpful for the initial creation of some types of content, guides can be created with no experience of web design. Web 2.0 features are also available so that students can be encouraged to rate sources that are recommended or even contribute their own sources to the guides.

The BCCC librarians created their first LibGuides as Embedded eBrarian content, but they quickly began to create and use them for all types of IL instruction and awareness (http://bucks.libguides.com). In keeping with Kuhlthau’s description of “just for me” services and the College’s own IL mission statement, each guide was clearly created for one specific assignment. Links to relevant tutorials were presented, or the videos were embedded directly into the guides. Links to relevant databases, automatically directed through the College’s EZproxy server, were posted on the guides with helpful descriptions or hints for searching. A catalog search widget was created that could be copied into the guide for any assignment for which library books were appropriate; a widget box for the Library’s chat reference service could also be included. In response to the popularity of YouTube with students, and recent reports of academic faculty creating YouTube videos to augment their course content (Young, 2008), Embedded eBrarians began to make their own videos as casual, personal introductions to their LibGuides, post them on YouTube, and then embed the videos in the guides, with accompanying text for visually-impaired students. Contact information for the librarian was presented. Each LibGuide was, in essence, a one-stop interface designed to simplify, clarify, and promote each student’s experience of using the Library virtually. Students are encouraged by the very nature of the guides to take from each what they need, and to respond in kind—to see the guide as a “just for me” virtual library.

Hit rates on the guides in Year Two have been significantly higher than hit rates on the individual tutorial links in Year One. To date, the LibGuide for Introduction to Psychology has been viewed 312 times by two classes totaling 60 students (a minor number of hits may have been by students or faculty not involved with this particular course); the LibGuide for Effective Speaking has been viewed 510 times by four sections of the course totaling approximately 120 students. Perhaps not coincidentally, Year Two has seen no embedded online courses without traffic in the library discussions, an indication that the LibGuides and their content may be increasing student engagement.

Use of the LibGuides in the Embedded eBrarian program has inspired the use of LibGuides, YouTube videos and other content in face-to-face IL instruction, both by librarians and by classroom faculty. LibGuides have taken the place of paper handouts for many members of the library faculty, and the selective use of web tutorials and other media in the IL classroom has noticeably increased student engagement.

In response to this increased use and increased demand for new tutorials, the Online Learning Librarian recently began to publish new Captivate files as AVI video files rather than SWF, which allows him to upload the videos to YouTube rather than placing them on the Library’s server. The College is a participant in iTunes U, and so once the videos are posted on YouTube they are then downloaded as MP4 files and uploaded to the Library’s page on the College’s iTunes U site. Plans are in place to convert the older tutorials to these formats, and to revise the relevant page of the Library’s website so that the students may either stream or download the tutorials. It will also be possible to place “download this tutorial” buttons directly into the LibGuides.

Conclusion

As one response to the success of BCCC’s Embedded eBrarian program, the librarians hope to add their experience to the growing body of best practices for librarians embedded in online classes (York &
Vance, 2009). At the same time they recognize that their own best practices will evolve as the program grows, as the course management system itself evolves, and as new teaching and learning technologies continually emerge that will make the online IL experience as intimate and individualized as a face-to-face reference desk transaction. Among the technologies available today that have yet to be explored by BCCC in the context of online IL instruction are personal mobile devices, virtual worlds, and multimedia collaborative communication platforms like Google Wave.

The BCCC Library still needs to address the subject of assessment of its presence in online classes. The Library is currently re-evaluating its approach to IL assessment in general, and the results of this work will then be applied to assessment of the Embedded eBrarian program. Many opportunities for assessment are under discussion, aside from the less formal means already mentioned, including Adobe Captivate’s ability to produce interactive tutorials, a feature that has not to date been exploited.

Interactivity is the critical element in a successful library presence in online courses. This includes collaboration between librarians and online learning staff, between librarians and online classroom faculty and, most importantly, direct collaboration between online students and the virtual library that exists in their course spaces just for them.
References


Listening from a Distance: A Survey of University of Illinois Distance Learners and its Implications for Meaningful Instruction

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Abstract
In Spring 2009, the University of Illinois at Urbana-Champaign Library conducted a significant new survey of distance learners enrolled in off-campus or online graduate programs. Exploring distance learners’ perceptions about and use of library services, the survey of 146 students reveals opportunities to better meet the research needs of distance learners whose graduate work may demand extensive use of library resources. The survey affords insights into distance learners’ communication preferences, and their particular research needs. Findings from this survey have informed one academic library’s strategy to begin addressing important questions in library instruction for distance learners.

Introduction
As colleges and universities increase enrollment in online and off-campus courses, academic libraries are experiencing an increase in the number of long-distance patrons who lack the option to visit the physical library. The Association of College and Research Libraries Standards for Distance Learning Library Services (ACRL, 2008) state, “Members of the distance learning community...must therefore be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to those provided for students and faculty in traditional campus settings” (Philosopy section, para. 1). The effort to identify the most effective services for distance learners can be informed by routine surveys of distance learners about their library use.

In April 2009, the University of Illinois Library conducted a web-based survey to gather information about how distance learners use the library from afar. This survey was prompted in part by an imminent change in the library’s staffing structure in place to meet the needs of distance patrons enrolled in University of Illinois courses. At the University of Illinois, the majority of students enrolled in online or off-campus distance education courses are graduate students. When the survey was developed, little was known about distance learners’ awareness of the library, their expectations of the library, or the library resources they use. The survey’s objective was to gather baseline data about whether distance learners use the library, services used, preferences, and attitudes. Future services will certainly provide valuable data for assessment of distance library services. The results of this initial survey will inform practice as the University of Illinois Library plans services in reference and instruction and implements strategies to communicate effectively with distance learners.

Background
At the University of Illinois at Urbana-Champaign, more than 1,500 distance learners are enrolled in online or off-campus courses (i.e., courses that meet in-person or off-campus locations) administered by the Academic Outreach unit of the Office of Continuing Education. The majority of distance education courses administered by Academic Outreach are graduate-level courses. The departments represented by Academic Outreach course offerings include

- College of Agricultural, Consumer & Environmental Sciences
- College of Applied Health Sciences
- School of Art and Design
- College of Education
- College of Engineering
- School of Labor and Employment Relations
- Graduate School of Library and Information Science
- Department of Mathematics
- School of Social Work

Historically, library services for online and off-campus students were coordinated and primarily administered by a librarian hired by the Office of Continuing Education Academic Outreach unit. In an effort to streamline services and processes, Academic Outreach and the University Library decided to reexamine the role of the librarian in distance education. Over the course of the 2008-2009 academic year, multiple library departments worked with Academic Outreach in order to incorporate library services into the larger workflow of the University Library. Services examined included interlibrary loan services, reference, course reserves, and instruction. This survey was a major component of that effort.

**Literature Review**

Much of the literature about library services for off-campus, online, or distance students focuses on evolving practices and services. Although the results of recent surveys of off-campus academic library users have not been published in abundance, surveys conducted between 1998 and 2005 confirm that survey data can inform academic libraries about the specific needs of off-campus student patrons. Because off-campus students are unlikely to visit the physical space of their academic library, reaching out to distance patrons through survey instruments may be even more critical than for on-campus students. In reporting the results of a 2000 survey of University of Iowa students, Dew argues that conducting surveys of distance learners offers librarians the opportunity to “reverse roles, listen instead of talk, and let the students tell us a few things” (Dew, 2001). Dew’s point is illuminated in a 1999 survey of graduate students enrolled in the Texas A&M University System (Tipton, 2001). One hundred and two graduate students enrolled in courses through the Trans-Texas Videoconferencing Network were surveyed to measure satisfaction with library services and patterns of library use. Forty-five percent of respondents had used the online catalog, and 45% reported using journal databases. Thirty-five percent of respondents indicated that they had not used the services of any Texas A&M Library. The survey revealed confusion among some distance learners about whether they were entitled to library services, and how to obtain library services.

In Dew’s survey of University of Iowa off-campus library users, respondents were presented with a list of library services and asked to rank the three most valued services. The survey found that “virtual reference” (primarily email reference at the time the survey was conducted) was the most valued, ranked first by 71% of respondents. Remote access to full-text databases was ranked second (65%) and document delivery was ranked third (60%). In contrast, user education services, including instruction and tutorials, were ranked very low (Dew, 2001).

A second survey of distance learners at the University of Iowa was conducted in 2003 and reported in 2004 by McLean and Dew. While Dew’s first survey primarily included graduate students, the results reported in 2004 also included undergraduates. Understanding that there may be a difference in the information seeking needs of undergraduates versus graduate students, Dew attempted to differentiate between library use by graduate-level distance learners and undergraduate distance learners. In comparing responses from graduate students and undergraduates, Dew and McLean reported that undergraduates ranked full-text databases most highly while graduate students continued to rank reference most highly. This point of comparison provided important information about the needs of graduate students enrolled in off-campus courses versus undergraduates. The 2003 survey also included questions about use and evaluation of library services developed as a result of the 2000 survey. Responses were overwhelmingly positive, with over 70% characterizing library services as “excellent” or “good” (McLean & Dew, 2004).

The 2004 survey of Iowa distance learners was reported in conjunction with the results of a similar survey conducted at the University of the West Indies in Mona, Jamaica (McLean & Dew, 2004). Respondents reported overwhelming satisfaction with library services, though the survey also revealed a strong interest in new services, particularly in the area of web content, more full-text databases, library
instruction, and speedy document delivery. In an interesting point of comparison, both the survey from Iowa and the West Indies indicated that distance learners utilized libraries closer to home when possible.

Twenty distance learners enrolled in an Ohio State University continuing education course were surveyed about library services at the conclusion of an Applied Gerontology Education course (Rodman, 2003). Students in the course reported materials access problems, but more than half of the respondents said that the library service they most valued was electronic reserves. In addition, students responded favorably to library resources embedded in WebCT. Rodman’s findings demonstrate that distance students may be receptive to accessing library resources through their courseware. This form of embedded library instruction has been heavily discussed in the literature as a means of reaching students (Buehler, Dopp, & Hughes, 2001; Scales, Wolf, & Johnson, 2007; and Cassner & Adams, 2008). Herring, Burkhardt, and Wolfe (2009) note that surveys and focus groups of students had indicated that students were unaware of existing library services at Athens State University. In response, the library began embedding library information and instruction into Course Management Systems like WebCT and Blackboard.

In a survey of students enrolled in online courses through the Penn State World Campus (Moyo & Cahoy, 2003), 75 respondents indicated that they most valued the library’s online offerings, particularly full-text databases and the library catalog. Students reported a low level of interest in the library’s homepage designed for distance students, and minimal use of the online reference collection and subject library homepages. In contrast to the Iowa surveys, only 27% of Penn State World Campus students had used document delivery services, and only 10% of Penn State’s distance learners reported using virtual reference services. The survey revealed a low interest in library instruction. When asked to evaluate the ease of library website use, 69% of World Campus respondents found it “easy” or “very easy” to access library services through the website and the majority of students found the library adequate to meet their needs. Respondents with lower satisfaction were able to offer explanation and provide suggestions for improvements, yielding requests for tutorials, reference help, and improved document delivery. Like the Iowa and Jamaica surveys, a high proportion (61%) of Penn State World Campus students indicated that they used a local library to supplement the Penn State Library’s services. This survey informed the authors’ conclusion that Penn State Library services to World Campus students would be enhanced through building electronic collections, and implement “point of need” services, including virtual reference and embedded instruction and tutorials.

Undoubtedly, many academic libraries conduct surveys of distance students without publishing the findings, though the results of some surveys of off-campus library users have been disseminated in the library and information science literature. The surveys discussed here indicate relative levels of distance-patron satisfaction with library services, but also point to areas for growth in off-campus library services. However, in the evolving landscape of library services, new surveys are necessary. Research is lacking about whether off-campus students are using services like virtual reference. Information is also needed about how distance students prefer to communicate with the library, and about how the growing population of off-campus students learns of the library’s services. With these gaps in information in mind, the goal of a survey of off-campus library users at the University of Illinois was to understand how off-campus students now experience the range of instructional and reference services offered by the library, and what they expect of library services.

Methods and Procedures

A web-based survey of enrolled University of Illinois distance learners was conducted in April and May 2009. Because distance learners could be located anywhere, the researcher cannot meet in-person with each respondent, or bring groups of students together for a physical focus group (McMain & Jerabek, 2004). A survey questionnaire was built and administered with WebTools, the University of Illinois’ secure web-based survey tool. In order to respond, recipients of the survey link were required to authenticate using their campus NetID and password. Although identities were not recorded, WebTools prevented individual respondents from taking the survey more than once.
For the purpose of this survey, “distance learner” was defined as any student enrolled in an online or off-campus course administered by the Office of Continuing Education Academic Outreach unit. The Office of Continuing Education emailed a link to the online survey to more than 1,500 distance learners. A total of 146 people responded to the survey, answering 17 questions. Two of the survey questions were open-ended and fifteen were multiple-choice. Several multiple-choice questions included open-ended “other” options, in which respondents shared additional qualitative data. Questions covered a range of topics: use of existing library services, interest in potential library services, and communication preferences. In addition, the survey collected demographic data on several points, including academic department, degree sought, and distance from campus.

Analysis and Results

Use of Library Services

Sixty-four survey respondents (42%) indicated that they use the library website on a “weekly” basis, and 30 respondents (20%) indicated that they use the library website on a “monthly” basis. When asked what library services they had used over the last year, respondents overwhelmingly indicated use of electronic journals and course reserves, a finding aligned with surveys conducted by other researchers.

![Figure 1. “What library services have you used in the last year?”](image)

Participants were asked to check all services that applied. While distance learners are making relatively robust use of electronic journals and course reserves, responses to this question indicated that few distance learners use document delivery, instruction, or virtual reference services offered by the University of Illinois library. While the data show that students use the library, open-ended responses may explain why distance learners do not heavily use virtual reference or online library instruction. For example, one respondent said, “I don’t think the web site is easy to use. I was not aware of your webinars or IM a librarian. Perhaps I am doing these things late at night and not when a person is available. I would like a intro page with tutorials on how to do... different search engines and different resources the library has to offer.” Another respondent expressed a desire for “better advertisement of services; I feel there is a lot the library has to offer that I’m not aware of.” These qualitative statements indicate that libraries should implement more robust communication strategies and instructional modules targeted to distance learners.

The survey also indicates that University of Illinois distance learners are unaware of the expertise of subject specialist librarians. Seventy-three percent of respondents said they had never contacted a subject
specialist. Of the 26 survey respondents who indicated they had contacted a subject specialist, 11 were from the Graduate School of Library and Information Science. At the University of Illinois Library, the Library and Information Science Librarian is extensively embedded in online Library and Information Science courses. In contrast, subject specialists in other disciplines may not have the same level of contact with distance education courses. This suggests that distance learners may be more likely to contact the subject specialist in their discipline if the subject specialist is closely associated with their courses.

**Learning about the Library**

Through several questions, the survey attempted to understand how distance students learn about and communicate with the University of Illinois Library. This is particularly important because the library cannot assume that distance learners will enter the physical library building if they wish to consult with a librarian.

![Figure 2. “How did you learn about the University of Illinois Library?”](image)

As indicated by Figure 2, online and off-campus students are learning about library services from campus units other than the library. A sampling of “Other” responses included, “The email asking me to take this survey,” “I was an undergraduate at the university previous to beginning my doctoral program,” and “During orientation for the GSLIS distance (LEEP) program.” Under “Other,” several students indicated that they had attended the University of Illinois at Urbana-Champaign as undergraduates.

When asked how they would prefer to learn about services from the library, distance learners indicated a preference for email and use of the library website. Seventy-one percent of students said they would like to receive email from the library, while 59% of students said they would like to learn about services from the library website.

**Communication with the Library**

Students were asked to rank their preferred methods of seeking help from the library. Eighty percent of distance learners surveyed listed email as their first choices for communication with the library. Phone and chat/IM were both preferred by 48% of students. These responses are a contrast to the way participants report they actually communicate with the library. For example, while 80% indicate they would like to seek help via email, only 18% of respondents indicate that they have exchanged email with a librarian in the last year. Similarly, 15% indicate they they had spoken on the phone with a librarian, and 20% said they had used the library’s virtual reference services (via chat/instant message) to seek assistance from the library.
**Desired Library Services**

In order to gauge potential areas for growth in programming, the survey also sought to gather information about services that distance learners desired. One question was particularly revealing: “The library hosts one-hour, online webinars on several topics, including Library Research Skills, Finding Electronic Resources, and RefWorks. How likely are you to attend a webinar taught by the library?” Sixty-four percent reported that they were “somewhat” to “very” likely to attend a webinar convened by the library.

Figure 3. “How likely are you to attend a webinar taught by the library?”

**Perceived Importance of Services Proved by the Library**

To solicit more nuanced information from the students, the survey included an open-ended short-answer response to the statement, “The most important services that the University of Illinois Library provides to me are.” Not surprisingly, the most common answer was related to accessing online research resources. One student said, “The ability to access the library journals and collection despite not being an on-campus student. Without having the Academic Outreach Library, it would be very hard to complete my research projects as effectively with these services.” Another expanded on this service, “electronics have made it much easier but there is still no substitute for a knowing reference librarian or the multitude of choice you have available. I would rather pay more in fees than lose library services.”

**Wish List of Services**

The University Library also sought to understand what services students perceived to be missing. The open-ended question, “I wish the University of Illinois Library offered services such as:” gathered a wide range of insights. Several students replied in a similar way to this statement, “Right now I believe the library offers everything that I need at the moment.” But there were several indicators that students needed further instruction. One student requested “better communication with offcampus students (I had a hard time finding out how to get an article emailed to me)” and another asked for “more webinars (especially on refworks).” It did not come as a surprise that a few students asked for “better advertisement of services. I feel there is a lot the library has to offer that I’m not aware of.” Such statements remind us that distance learners want us to reach out. Their inability to walk across campus to speak with a librarian in-person must
be addressed in as many ways as possible. And finally, one student understands the nuances of online learning and asked for “a designated librarian for distance learners – someone who could, over time, become very familiar with the needs of distance learners.”

Discussion

As the library’s approach to serving distance learners continues to develop and evolve, surveying off-campus and online students lays a foundation for exploration of effective library services designed specifically for students who use the library from a distance. The data collected in this one-time survey suggests that an annual survey would provide useful data for assessment of the library’s performance in serving distance learners. This survey conducted in Spring 2009 has afforded the University of Illinois Library new insights into the information seeking needs of online and off-campus students enrolled at this institution.

The findings of this survey suggest that the library has a stronger role to play in information literacy instruction for distance learners. Survey respondents indicate awareness of library privileges when it comes to borrowing materials and accessing subscription-based resources. However, the library does not provide widespread opportunities for information literacy instruction, and this survey did not investigate how students perceive their own information-seeking abilities. The library could begin to address this gap in knowledge by identifying opportunities to integrate librarians into course-related instruction and by assessing the results. There is much in the library literature about forging relationships with teaching faculty and while this may be complicated by the nature of online courses, it is worth noting that reaching out to students in their curricular environment may be the first step in making a personal connection with the students. The library could also further develop library-related tutorials and web-based instruction modules for course management software. This focus may also have the added benefit of being applicable for on-campus classes that use course management software. The expansion of library instruction for distance learners will build awareness of library services, increasing opportunities for a sometimes alienated user population to interact with librarians. Further, targeting library instruction to distance learners will expose online and off-campus students to information literacy concepts that build higher-order thinking and support scholarly advancement.

In the context of library services, the term “distance learners” is a blurry distinction because some campuses, including the University of Illinois at Urbana-Champaign, have broadened the traditional on campus curriculum to include courses that meet online. Thus, the results of this survey may be applied to a wider selection of students. To illustrate this point, the University of Illinois has produced a variety of instructional videos to help distance learners with discrete and targeted tasks such as locating books in the online catalog. These videos do double duty for online and on-campus students. Online and on-campus faculty may both benefit from this web-based guides and instruction. For example, a web-based guide about submitting online course reserves is useful to faculty working from anywhere. Gauging demand for digital and web-based instruction among distance learners enables the library to further justify the use of personnel and resources for the creation of instructional materials.

Use of Library Services

Sixty-two percent of respondents indicated that they access the library website at least once per month. Eighty-five percent of respondents had accessed electronic material through the library in the last year and 53% had accessed electronic course reserves. However, many key library services remain untapped by University of Illinois distance learners. Respondents reported lower use of several library services: 20% had used virtual reference in the last year; 18% had consulted with a subject specialist; 17% had used web-based tutorials; and 18% had used document delivery services. These library services are especially significant to the surveyed population because 70% of respondents identified as graduate students. The research expectations in master’s level courses demand that students develop and use research skills to locate information related to their coursework and research. Responses to open ended questions suggest that many distance learners are either unaware of the library’s services, or unaware of how library resources can support their research. To increase use of library services by distance learners, the library must communicate more directly and clearly about its services. This leads us to ask two
questions: How can the user-centered library constructively assist distance learners in obtaining materials needed for research? And possibly more importantly, how can librarians extend beyond the complexities presented by materials access to address the distinct information literacy needs of distance learners? Recognizing that all students have different learning styles, librarians can use web-base guides, instruction videos, and podcasts to deliver information literacy instruction to distance learners. Instructional content may be effectively promoted to students by listening to their expressed preferences for learning about the library. In addition, training librarians and staff who provide reference services to readily identify distance learners may enhance the quality and efficiency of reference interactions with distance learners and their unique access needs.

Learning About and Communicating with the Library

In the case of University of Illinois distance learners, this survey suggests that email marketing would be an effective method of building awareness about library instruction and other forms of assistance. The majority of respondents indicated that they would prefer to receive information about the library via email. This finding is not unexpected, given that distance learners must conduct much of their academic work via email, courseware, and online meeting software. In marketing library services to distance students, the library may consider more extensive email outreach for students enrolled in online or off-campus courses. Several underused services could easily be promoted via email, including document delivery, instructional material, and virtual reference. For students who reside on campus, it may be more serendipitous to learn about services simply by walking into the library and coming across flyers or by participating in a conversation with a librarian or staff member. A dedicated web portal for distance learners may also clarify available services, particularly for distance learners using the library for the first time. Although most students indicated that they would prefer to communicate with the library via email, it may be possible that knowing more about available services (for example, virtual reference) would change usage patterns among distance learners. For online learners, the library must reach out in as many arenas as possible including but not limited to the library website, emails, RSS feeds, course management software and word-of-mouth from other students and professors. Robust communication about library services could increase the likelihood that distance learners will identify the correct avenue for assistance at their point of need.

A significant number of respondents indicated that they had learned about the library from their instructor or from a librarian who visited their class. This information suggests that students are receptive to learning about using the library in the context of courses that require research. Although there are a few subject specialist librarians embedded in specific courses at the University of Illinois, this is not widespread. Many University of Illinois online and off-campus instructors hold adjunct status. It is possible that adjunct faculty are unaware of the wide range of services the library provides, including in-class instruction by librarians and web-based guides linked to courseware. To forge instruction partnerships with online and off-campus faculty, subject specialists may face new challenges in using distance-learning technology and in learning to address online learning styles in their information literacy instruction. The results of this survey indicate that students enrolled in online and off-campus courses would be receptive to expanded librarian participation in courses. By targeting a variety of communication points, the library has a better chance spread its services, and to capitalize on instruction opportunities. Again, these findings suggest that librarians at the University of Illinois have untapped opportunities to partner with distance faculty to introduce distance students to the library and information resources that support scholarly research. Seizing opportunities for course-related instruction will increase the library’s opportunities to meet distance learners’ basic need to understand materials access, in addition to engaging distance learners in higher order thinking associated with information literacy instruction.

Conclusion

The conclusion of this research is that University of Illinois distance learners generally appreciate the library, but the scope of library services accessed is limited. In order to build awareness of the diverse range of services available to distance learners, the library must proactively communicate with distance learners, and work to make connections with students and faculty directly in the context of academic courses. The findings of this survey demonstrate that online surveys are a useful tool in attempting to
understand the needs of library patrons who are enrolled in distance education. These findings have informed the University of Illinois Library's strategy to address important questions in library instruction for distance learners.
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Using Micro-Blogging Tools for Library Services

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Abstract
Micro-blogs are ubiquitous participant web technologies that enable users to share information, interact with content, and generate resources. Librarians can use these applications for library services, instructional activities, and event promotion. For librarians and patrons, these technologies can be combined with other social media to develop personal learning networks (PLNs) for teaching, learning, and research. As PLN tools, micro-blogs can provide librarians with many opportunities to build cohorts of professional support and gain access to materials not readily accessible in traditional formats. Discussion provides an overview of issues to consider when using micro-blogs as library tools.

Introduction

Micro-blogs are ubiquitous participant web technologies that enable users to interact, message, and share information. Among the most notable services are Twitter, Tumblr, Plurk, Emote.in, Jaiku, and identi.ca. Unlike social networking applications, micro-blogs seem to be used for quick information feeds. Most micro-blogging services combine the mobility of text messaging and push technologies to give users ease of accessing and generating information. As micro-blogging evolves, various applications are beginning to offer extensive add-ons and features to enable media-rich user-generated content. Several micro-blogging tools allow file sharing, video/audio/music sharing, and multiple streams for sending content to targeted user groups. Users can add tools that extend the characters for posts, synchronize content with other social networking applications, and expand interactivity with other web services.

In most micro-blogging applications, users create an account which immediately enables them to begin posting simple notes or messages in a text box. Unlike blogs which allot no limit on text, micro-blog postings are limited by the number of characters (for example, Twitter allows 140 characters in a traditional post). For most users, posts serve as updates of what is happening at a given moment. Some users post feeds of links, announcements, events, and news information. All micro-blogs have timelines and, in some cases, archives of the posts are stored in reverse chronological order much in the same manner that a blog application functions. Account holders can modify their account settings to determine accessibility to the postings. For example, if the account holder allows for public view of the information, all of the members associated with the micro-blog community can view the post. If an account holder wants to restrict access to postings, then only designated members of the users “select” community can have access to the posts. Many libraries using micro-blogs have created both public and private accounts to send different types of information to different user sets. In some micro-blogging applications, posts can be exported to another source for future reference.

Common Features

The basic platform of a micro-blogging tool consists of a text box and a window that streams postings (public and private) in real time. Account holders can use the tool for their own postings, but in most cases, these tools are designed to build networks and relationships with other individuals to gather and share information. Each micro-blog application has a different method in which account holders can find people to share information and establish a connection. In Twitter, (http://www.twitter.com) account holders can “follow” individuals whose posts interest them or seek out specific individuals who may have a Twitter account and then select to follow them. In Jaiku (http://www.jaiku.com), users can search for channels on a wide range of topic areas. In Tumblr (http://www.tumblr.com), users can locate groups that
they may wish to join. Almost all of the micro-blogs enable account users to add contacts through other SMS clients. Most of the tools offer extensions that enable the sharing of various media (photos, audio, video, and other files). Postings are streamed in a continuous manner. Most applications are limited to one stream, but some applications allot for multiple streams of postings. In Tumblr, one can set up multiple blogs that stream information from different sources. This type of micro-blog is most useful if the account holder wants to distribute certain types of information to specific user groups.

**Specialized Features**

Micro-blogs offer a wide range of features targeted to certain user groups. For example, Edmodo is a micro-blog targeted toward K-12 educators who wish to set up private and secure networks for their courses. Edmodo offers file sharing, archiving, data storage, and streaming information in a private and secure network. Educators can set up multiple course sites within an account. Students assigned to a site can, in turn, set up their own micro-blogs within the course itself. Hence, students can safely explore the features of a micro-blog within the secure network established by their instructor. In many ways, Edmodo resembles a course management tool that gives students the opportunity to safely and securely engage in micro-blogging.

Micro-blogs such as Twitter and Tumblr have several extension apps that can be used to enhance the use of the micro-blog. For example, if someone wants to post longer than the 140 character limit, Twitter has an application called TwitPho that allows a longer blog post to be linked to an initial post (usually called a “tweet” in Twitter). TwitPho allows Twitter users to send pictures, surveys, and RSS feeds through the initial the account. Tumblr has a built-in blogging tool for longer posts. Shorter postings can be linked directly to the blog entry.

Some micro-blogs have features that help organize content. In Twitter, many people use Tweetdeck to manage updates, user profiles, content, and information accessed. In Tumblr, one has a dashboard to organize blogs, postings, and groups. To manage different accounts, Tumblr actually enables one to set up multiple blogs within the account. Most tools also offer users the ability to organize favorite postings. In Twitter, there is a feature that allows “favorite” posts to be bookmarked. Tumblr also allows book marklets and archiving. These features are especially useful to store useful links and resources for quick access. Squeel adds geolocation and pictures to the microblog, while eliminating user accounts, making it an anonymous microblogging service. Plurk has a timeline view which integrates video and picture sharing. Emote.in has a concept of sharing emotions, built over micro-blogging, with a timeline.

**Library Application of Micro-Blogging Tools**

There are several articles in the library literature that identify ways in which libraries are using micro-blog applications for services, operations, and outreach. The majority of these articles, however, focus on using Twitter. Joe Murphy (2008) discusses how libraries can use Twitter for sending information and announcements to patrons, while Ellyssa Kroski (2008) discusses why medical libraries are using Twitter for research. Lindy Brown (2008) provides a detailed overview and case studies of libraries using Twitter in her article entitled “Twittering Libraries.” Brown’s article lists libraries that use Twitter for various functions and serves as an excellent resource to begin review of what libraries have done. It is important that librarians take the time to read reviews on the lesser known micro-blogs simply because these tools may offer better features to suit the purpose of setting up an account. For example, if library staff determine that they may use a micro-blog for teaching, it might be better to use a tool such as Edmodo because it is designed specifically for teaching with its level of file sharing and privacy features.

Many librarians are also using micro-blogs as personal learning environments for their own teaching, learning, and research. Librarians who need more of a blogging type of tool may prefer to use tools such as Jaiku and Tumblr which has several targeted research communities. However, most places are still not certain how micro-blogs can differ from traditional email services. The following discussion gives a more detailed overview of how libraries are using micro-blogs.
Library Operations

Many libraries are using micro-blogs instead of inter-office email to provide immediate access to information to multiple users. In many cases, micro-blogs are useful for providing emergency services information, announcements, and updates or status reports. Library staff subscribed to the micro-blog can receive feeds in a ubiquitous manner. Some librarians use micro-blog tools for committee work. Being able to engage in the group work of a project through the use of a micro-blog tool can be important if participants at several locations must work together to meet a deadline. If librarians use a micro-blogging tool that allows for document sharing, files can be sent for review and revisions. It is often easier for someone to access a micro-blog message than it is an email from a closed system.

Libraries can also use micro-blogging tools for updates on security and safety issues as well as status reports regarding certain events, projects, or programs. Murphy (2008) suggests that “a micro-blog can be used as a dynamic FAQ by posting policies” (p. 1) and tagging #FAQ to postings. Murphy also suggests that libraries can post “news, special events, hours, exhibits, new book arrivals, reminders, and new references services” (p. 1) to patrons.

Announcements regarding new holdings, specialized training, and new services can also be directed through the blog. Departments within the library can disseminate information more quickly through the micro-blog by posting information through different streams. Micro-blogs that enable account holders to develop multiple streams can offer librarians the ability to develop unique content streams for unique patron populations. For example, a children’s department in the library may want to update parents about reading programs and activities, whereas a foundations steam may want to update donors of fundraising events. The flexibility in creating information streams is often the appeal of micro-blogging.

Reference Services

Since micro-blogs can connect users to one another very easily, it is possible to see how these tools can be used in online chat reference to help patrons locate additional and current information on a given topic. Patrons can be asked to post questions which in turn can be shared on the micro-blog network. Answers generated from the librarian’s community can then be used to assist in the information gathering on the topic.

The level of peer to peer interaction in some of the micro-blogs generates rich conversations and builds research communities. Two individuals doing the same research on a given topic may respond to a posting that they find and, in turn, become connected just because they shared commentary on one post. Subject streams are easy to create in micro-blogging applications, which aids in finding the most current content on a given research topic. The archives in most micro-blogging tools offer a rich database of resource to keyword search. These scenarios can help link patrons to each other. Hence, librarians can create a tag such as Genealogy Research for patrons interested in genealogy. Reading groups for the library can also be sustained through micro-blogs and be more inclusive of patrons who are unable to travel to the library. In turn, micro-blogs extend services to patrons that are placebound.

Likewise, many micro-blogs have connected community lists that identify expert users of the tool. There are many sites dedicated to creating directories of micro-blog users by categories. For example, a site such as “Twitter for Teachers” can provide a list of content areas for educators. Users can search most micro-blogs for specific subject area groups. This proves useful for references services because when patrons are seeking specific information and when there may be others in the community doing similar work.

Library Instruction

By setting up an account in a micro-blog, such as Edmodo, a librarian can create a course site for instructional purposes and provide access to subject specific handouts for workshops, library seminars, and instructional activities. Students or participants in a workshop can access the course/workshop materials.
through the blog and interact with the content and other individuals in the course without having to come to a physical site. By using micro-blogs, librarians can create learning environment for e-learning students who do not wish to come to the physical library. Links to the online catalog and other e-learning services for remote access users can be provided through the micro-blog and the library instructor can interact with students in a controlled environment. Such services can better connect libraries to K-12 institutions and library media specialists can have extra assistance in working with public, academic, and special librarians on a wide range of instructional topics and projects. Setting up accounts with local archivists can give students access to community historical information that they may not otherwise have the opportunity to use.

In addition to providing library instruction to remote access patrons, micro-blogs can be used to teach information literacy skills. For example, a class can be asked to search a keyword on a subject specific topic and evaluate the content they retrieve using information literacy standards. It is easy to demonstrate the importance of sources and authorship by noting who is posting which information. Students can also learn about online plagiarism in the manner that information is presented in these forums. Research practices that help students learn how to integrate the content from social media sites is very important because these are the tools that students most often use to locate information. The more librarians teach with these tools to improve information and social media literacy skills, the more likely students will understand best practices in using these tools. Having students follow certain content experts can show how information is shared and disseminated. Discussions about copyright, currency, and social media literacy, are best presented by tools that thrive on user-generated content. Librarians can find numerous examples of research practices to demonstrate to students the best practices of engaging in the processes of information literacy.

**Personal Learning Networks**

In many cases, librarians are using micro-blogs to connect to colleagues and other information professionals to share information, resources, and other useful materials. Several library organizations have accounts in some of the more popular micro-blogging applications so librarians can follow the updates of these groups. Almost all academic conferences have begun to include micro-blog access to the conference so individuals unable to attend the conference can interact with some of the presentations and presenters. Participants in the session itself can interact with the content that the presenter is sharing without disrupting the actual presentation. In many cases, Twitter feeds update conference attendees of discussions, upcoming events, and further resources regarding a given session. Since so many conferences are now including access to micro-blogging accounts to get information, individuals can actually attend two sessions at once. While sitting in one session, conference participants can micro-blog in another. In addition, conference attendees can share information with colleagues who could not attend the session. Individuals unable to attend the conference can at the very least find out the topics of presentations and potential contacts for further inquiry. Even if one cannot attend the conference, one can keep abreast out of presentations in a given research area.

Micro-blogs are used for teaching, learning, and research on several levels. In Twitter, every Tuesday, the hashtag #edchat connects individuals from all over the world to spend some time to interact on discussion topics on education technology proposed by the group organizers the night before. Even if one does not participate in the discussion, the lively debate one sees while following the #edchat tag offers insight, resources, and a vast array of material that would not get in a face to face workshop on the same topic. Furthermore, the archives enable users to go back through the posts to see what issues were discussed.

In Jaiku, individuals working on a given research project can set up a channel to recruit others interested in the research to collaborate. Similar to Facebook groups, such work enables people to create collaborations that might not have existed. Many micro-blogs are often linked to library social networks forum in Facebook, Ning, and Linked-In. The ability to integrate these tools with one another can allow librarians can send one update to all the sites and extend group related activities in several venues.
By using some of the search features in micro-blogs, one can type in a keyword to obtain links, latest reactions, and, many times, useful information related to the topic. Seeing who has posted on the topic helps one find out who might be an expert on the subject. Such information is invaluable because one can link to resources that offer the most current information. Micro-blogs help build community around a given topic. If a librarian is doing research on web accessibility, posting queries on the topic can yield the “wisdom of crowds” and instead of getting flat references for the literature review; one can obtain an array of interactive musings from a global perspective. Posting queries on research topics can help one find others who may be involved with similar projects. All micro-blogs help build collaborative projects for presentations, articles, and even book projects.

Individuals working on collaborative writing projects or presentations can use these tools to update each other on the progress of the project. It is easier than email because of the greater accessibility one has. Since many micro-blogs allow connection to mobile phones, users can access material without even logging in to their email account.

Challenges

As with any technology, micro-blogs can pose potential challenges. For example, since many micro-blog applications are open source technologies, they can easily disappear. For example, Pownce, a very popular micro-blog ceased to exist after only one year of operation. Micro-blogs are often the targets of spam and other problematic web information. User accounts can attract a wide range of unwanted connections and inappropriate material. Although one can set up filters to block certain users or content, micro-blogs require careful monitoring. If an account is not managed well, users associated with the account can begin posting information that the libraries do not want associated with their public micro-blog.

The account itself must be established with parameters in place. If the account is set up for an organization, access to the administrative rights to the account must be determined. Updates posted by one person may be a burden; updates posted by several people could be chaos. If a group is assigned to manage the micro-blog, departments may determine how they will handle updates and news feeds. Some libraries have units within the library post to an internal account and then once the materials are approved, they are submitted to the public account for patrons to review. The challenge is to keep the posts interesting, useful, and informative. All too often, individuals may not post material that is meaningful to users. Furthermore, new policies regarding social media content may have to be developed to ensure consistency in information delivery.

Not all micro-blogs are free. Jaiku requires monies for additional space. For libraries wishing to archive postings for a digital record, this limitation may be problematic if there are no monies budgeted for this purpose. Applications to extend services may cost additional monies. Also, libraries may not want to set up micro-blog accounts on the library desktops. Additional equipment may be necessary if the library wants to keep the access to micro-blogs separate from the central computing system of the library.

Security and privacy parameters are also very important. Some libraries may not want their micro-blogs to have options that allow followers to reply to the content. Twitter for instance, cannot restrict the “reply” feature on the tool. While someone could delete a reply that was inappropriate, it would be difficult to remove the “reply” from the community base. Hence, a patron complaint could remain within the system even if the library deleted the statement from their site. Although libraries could restrict who had access to post, such filtering may not be popular with patrons. Libraries could set up different accounts, but not have the ability to filter these accounts.

Special policies will have to be created regarding how a library will use micro-blogs. If the tool is going to be used for marketing, specific guidelines will need to be created to delineate the type of content distributed to patron groups. Oversight of this content may require libraries to delegate monitoring and management duties to a staff member that really does not have the time to do this work. Outsourcing such work to someone may not be practical either. While some librarians may not think that managing public postings through a blog service would be difficult, it will take time from other responsibilities to edit,
respond, and monitor postings from patrons. Since micro-blogging is ubiquitous, postings will continue well after the library is closed for business.

Conclusion

Libraries should investigate ways in which micro-blogs can expand interaction within the workplace and with patrons. Guidelines to manage content generation and delivery need to be established to make management of such tools less burdensome for library staff. An investigation of the various micro-blogging tools is important to determine which tool would best suit the purpose that the library intends for the use of the micro-blog. While some services are more popular than others, these services may not be the best micro-blog application for the library. It is recommended that libraries use a combination of micro-blog applications to serve both public and private functions. It is also recommended that libraries target the patron groups that might be best serve through the integration of this technology in library services. Some patrons may not be willing to use this technology for their information needs.

Overall, micro-blogs offer a rich media for libraries to explore in expanding access and delivery of information services. The potential of these tools to build information learning communities will impact library services, particularly in terms of outreach and instruction. Expanding library services to place-bound users through the use of micro-blogging tools increases additional access points to the library.
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Pre- and Post-Assessment Surveys for the Distance Section of LIBR 1100, Introduction to Library Research

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Abstract
Articles and other materials reporting the experiences of librarians in assessing what distance students are learning in online information literacy classes are not well represented in the professional literature. Librarians who have experience assessing distance student learning should share what they have learned with colleagues who, in turn, need to know what methods are working, and how the assessment process can be used to improve online teaching and learning. This article reports on the experience gained by librarians at Texas Tech University Libraries while developing and implementing pre- and post-assessment surveys that were administered in the distance learning section of a library research course taught in the fall of 2009. The course had not included learning outcomes assessment before 2008. The assessment’s findings were used to improve both the content and the teaching of the course’s online section.

Introduction

Responding to the report of the United States Department of Education’s Commission on the Future of Higher Education titled A Test of Leadership: Charting the Future of United States Higher Education, the regional higher education accreditation organizations made changes in their standards that reflect the Commission’s recommendation that American institutions of higher education show through empirical evidence that they are committed to improving student learning (United States Department of Education, 2006, p. 4, 14-15). These changes have been primarily responsible for the trend toward learning-outcomes assessment. Some of the standards of several of these regional organizations relate to academic libraries and have changed the way they are assessed (Association of College and Research Libraries, 2008). The libraries’ information literacy programs have particularly been influenced by the new standards. Because of this new emphasis on student learning-outcomes assessment and the inclusion of information literacy in the efforts of many colleges and universities to assess their programs and courses, librarians are now using outcomes assessment methods in their information literacy classes. The data collected from these assessment efforts is being used to improve the content of information literacy courses and sessions and the teaching skills of librarians.

Articles reporting the experiences of librarians in assessing what distance students are learning in information literacy classes are not well represented in the professional literature. Librarians who teach distance students and use outcomes assessment methods to determine what their students are learning should share their assessment findings with colleagues who want to know what methods are working and how the assessment process can be used to improve teaching and learning. This article reports on the experience librarians at Texas Tech University Libraries gained while developing and implementing pre- and post-assessment tests that were administered in the distance section of a library research course taught in the fall of 2009.

Literature Review

The authors searched in several resources and found citations to a large number of articles, books, documents, and other materials on the assessment of information literacy skills. Many of these materials are guides, manuals, or action plans; articles on the need to integrate information literacy assessment into general education; or reports of accreditation trends in higher education. Some of these materials discuss strategies used to gain support for or to develop information literacy assessment programs, or report on
state-wide assessment programs of higher education curricula without the details of any particular assessment projects. The authors also found several citations to articles reporting on assessment projects implemented in traditional classroom courses. They found only two articles that report the experiences of librarians in assessing distance student learning of information literacy competencies either in academic department courses or in the information literacy programs of their libraries. Only one of these articles assesses distance students enrolled in a one-hour credit, elective library skills course.

Ivanitskaya, DuFord, Craig, and Casey (2008) review the results of tests that assessed the information literacy skills of off-campus students. The study employed a “Research Readiness Self-Assessment” survey as a pre- and post-test in an off-campus Master’s degree class at Central Michigan University. Among other things, the authors of the survey investigated the impact that pre-tests have on the effectiveness of library instruction when students are given feedback on their pre-test performance. Mulherrin, Kelley, Fishman, and Orr (2004) review the results of pre- and post-tests taken by distance students enrolled in LIBS 150, a one-hour credit, elective library skills course offered at the University of Maryland. The tests were administered as an early phase in the development of the course and proved to be an important factor in its eventual success (Mulherrin, et al., 2004).

Background

Texas Tech University has offered a one-hour credit course titled “Introduction to Library Research” (LIBR 1100) to undergraduates for several years. The course teaches the basics of library research and targets freshmen. However, sophomores, juniors, seniors, and even an occasional graduate student also enroll in the course. Most of the Information Services Librarians at Texas Tech University Library are involved in teaching the course. Several sections are offered each fall semester, and two or three sections in the spring. Each semester one of the course’s sections is taught online to distance students. There are no classroom meetings for these students. The entire course is taught on the Internet to students located across Texas and in some cases out-of-state.

Every semester, each section, including the distance section, has been evaluated by the students enrolled in the section in terms of the course content and instructor. However, the student evaluations have always been subjective, and what students were learning in the course was never objectively assessed. In an effort to find out what the students were learning, the librarian instructors decided to begin measuring student learning outcomes with pre- and post-assessment surveys. They began using the surveys in the fall of 2008, and plan to continue using them each semester for the foreseeable future. The intent of the surveys discussed in this study was to determine as objectively as possible whether students enrolled in the distance section of LIBR 1100 were learning what the instructors teaching the section intended for them to learn. Though there were other assessment tools used in this section, namely written assignments that required the performance of skills and an annotated bibliography project, the pre- and post-assessment surveys focused on determining what distance students had learned from reading the learning modules. This assessment study replicates the method used in a study done in the fall of 2008 on all sections of LIBR 1100.

In addition to the written assignments and annotated bibliography project, the distance section of LIBR 1100 had several learning modules presented in PowerPoint presentations or Word documents and made available on the section’s Blackboard site. The modules were titled “Introduction to Campus Libraries and Each Other,” “The Information Cycle,” “Evaluating Sources,” “Citing Resources and Plagiarism,” “Introduction to the Research Process,” “Controlled Vocabulary, Boolean Operators, Search Strategies,” “EndNote Web,” “Scholarly Journals and Popular Magazines,” “Books and eBooks,” “Newspaper Articles,” “Government Documents,” and “Online Information Sources.” Short quizzes following some of the learning modules were used to assess comprehension and to reinforce course content. The questions in the pre- and post-assessment surveys also addressed the content of the readings (The questions in the survey are available in Appendix A.). The students were also required to keep a research journal and to participate in online discussions.

Each of the outcome objectives of LIBR 1100’s distance section specifically addressed one or more of the ACRL Information Literacy Competency Standards for Higher Education (See Appendix B for the ACRL Information Literacy Competency Standards for Higher Education and their performance.
indicators). Objective One, “Students will be able to identify and articulate their information needs,” was large in scope and covered all five Standards, including most, if not all, of the performance indicators listed under the Standards. Objective Two, “Students will develop a knowledge base regarding the collections and services of the Texas Tech University Libraries,” was meant to respond to all of the performance indicators in Standard Two, and Performance Indicator 5.3 in Standard Five. Objective Three, “Students will use information effectively to accomplish research goals and to develop life-long learning,” addressed Standard Two, Performance Indicator 2.3. Objective Four, “Students will demonstrate the ability to critically evaluate and ethically apply information” was meant to respond to all the performance indicators of Standard Three.

Each pre- and post-assessment survey question addressed particular ACRL Information Literacy Competency Standards, their performance indicators, and course outcome objectives. Questions One and Five addressed Standard Two, Performance Indicator 2.2 (course outcome objectives 1 and 2). Questions Two, Eight, Nine, Ten, and Eleven addressed Standard Two, Performance Indicator 2.1 (Course Outcome Objectives 1 and 2). Questions Three and Seven addressed Standard Three, Performance Indicator 3.2 (Course Outcome Objectives 1 and 4). Questions Four and Fifteen addressed Standard Two, Performance Indicator 2.3 (Course Outcome Objectives 1, 2, and 3). Questions Six and Thirteen addressed Standard One, Performance Indicator 1.2 (Course Outcome Objective 1). In addition, Questions Twelve and Fourteen addressed Standard Two, Performance Indicator 2.5 (Course Outcome Objectives 1 and 2).

Table 1 shows the relationships of the course outcome objectives and the assessment survey questions to the ACRL Information Literacy Competency Standards for Higher Education, along with their performance indicators. Each pair of pre- and post-assessment scores (the pre-assessment score before the slash, followed by the post-assessment score) corresponding to the question number in that row is meant to serve as a measure of how well the students knew or had learned a particular outcome objective and standard. A higher score on the post-assessment survey question than on the pre-assessment question would indicate that the students had learned this outcome objective and Standard Performance Indicator in taking the online course.
Table 1

Relationships of the ACRL Information Literacy Competency Standards, their Performance Indicators, the course objectives, and the survey questions with students’ pre-test and post-test scores

<table>
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<th>LIBR 1100 Outcome Objective</th>
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<tr>
<td>1</td>
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ACRL Information Literacy Competency Standard and Performance Number

| 1.1 1.2 1.3 1.4 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4 3.5 3.6 3.7 4.1 4.2 4.3 5.1 5.2 5.3 |

Methodology

The findings and conclusions of this study are based on analysis of the input of all those students enrolled in the distance section of LIBR 1100 who took both the pre- and post-assessment surveys. Thirteen of the students took both the pre- and post-assessment surveys. All of these students were treated as a single group. The reported frequencies and percentages of correct and incorrect answers pertain to the entire group of participating students. The students’ answers on both surveys were downloaded from the section’s Blackboard site to a Microsoft Excel spreadsheet. The authors used formulae available on the Excel software to tabulate all the data and determine the averages.

As an incentive for the students to try to do well, the surveys were graded. The pre-assessment survey enabled the students to earn up to 15 points toward their final grade, and the post-assessment survey enabled them to earn up to 75 points. Both the pre- and post-assessment surveys contained the same questions. The instructors felt that the fourteen weeks between taking the surveys was a sufficient length of time for their students to forget the questions answered in the survey at the beginning of the semester. Each question in the survey has one correct answer. The instructors plan to update the survey regularly and use it every semester. The order of the questions will also be regularly changed.

As with all testing instruments, the reliability and validity of the pre- and post-test method for determining accurate measurements of what students have learned is entirely dependent on the test itself. Such things as the integrity of the questions, the research design for the survey study, and its methodology affect the reliability and validity of a testing instrument. In his 1993 article “Evaluating Library Instruction: Doing the Best You Can with What You Have,” Donald Barclay provides an interesting examination of pre- and post-surveys used as tests (Barclay, 1993). He concludes his article with the observation that,
though library instruction evaluations may not always meet the highest standards of scientific rigor, this should not deter librarians from implementing evaluative studies. Early attempts at evaluation should serve as a spur to begin the process of continuous improvement in the quality of the evaluation method.

Results

The average score of the group of students who took both surveys was determined by adding the percentages of the 13 students who answered each question correctly and then determining the average of the total. The average score on the pre-assessment survey was 41 percent, and the average score on the post-assessment survey was 66 percent. Thus as a group, the students increased their average score by 25 points from pre- to post-assessment. This improvement is encouraging.

In the fall of 2008, the instructors teaching LIBR 1100 administered pre- and post-assessment surveys to the students enrolled in all eleven sections of the course taught at that time, one of which was a distance section. As with this present study, an average score of the group of students who took both surveys (in this case there were 176 students) was determined by adding the percentages of the students who answered each question correctly and then determining the average of the total. The average score of the previous year’s group on the pre-assessment survey was 43 percent, and their average score on the post-assessment survey was 56 percent. Thus the group of 13 distance students who took the assessment surveys in the fall of 2009 did better on the post-assessment survey than the much larger group of 176 students who took the surveys in the fall of 2008. Their group score on the post-assessment survey was 10 points higher than the previous group’s score.

Considerable improvement was made on the first question in the post-assessment survey. The students were asked to identify the three Boolean operators (See Appendix A for the frequencies and percentages of correct and incorrect answers, along with all possible answers, for each question). Thirty-one percent of the group answered the question correctly in the pre-assessment survey, and 85 percent answered it correctly in the post-assessment survey. No change took place from pre- to post-assessment on the second question which asked the students to identify the least likely resource for finding citations to articles. The answer was the Texas Tech University Libraries’ online catalog. Only one student (eight percent of 13 students) answered the question correctly in both surveys.

Question Three asked the students what to look for in determining the authority of an Internet site. The group did very well on this question in both surveys. Ninety-two percent answered the question correctly in the pre-assessment survey and 100 percent in the post-assessment survey. However, Question Four, like Question Two, was challenging for the students. When asked to identify the correct statements in a list of possible answers that included examples of a call number, an ISBN number, a citation to a book, a citation to an article, and a URL address, only eight percent (one student) answered the question correctly by identifying the correct examples on the list in the pre-assessment survey and 38 percent answered it correctly on the post-assessment survey.

In Question Five, the students were asked to identify the “word search” that would give them books most directly related to gang violence. One-hundred percent of the students correctly identified “gangs AND violence” as the correct answer in the pre-assessment survey and 100 percent selected the correct answer in the post-assessment survey. The results of this and the first question in the survey suggest that, by the end of the course, a significant majority of the students in the group understood what Boolean operators were and how they worked.

The students seemed to have improved their ability to identify primary research sources in Question Six as a result of taking the course. Fifteen percent of them identified the primary sources in the list of possible answers to the question in the pre-assessment survey and 62 percent did so in the post-assessment survey. Similar improvement took place on Question Seven. The students were asked to identify “typical scholarly research sources” from a list. Twenty-three percent of the students selected the correct answer in the pre-assessment survey, and 77 percent selected the correct answer in the post-assessment survey.
The low scores on Questions Eight and Nine indicate that most of the students do not have a good understanding of what can be found in an online catalog. For Question Eight, only eight percent (one student) in the pre-assessment survey and 15 percent in the post-assessment survey correctly identified the kinds of information that can be found in the Texas Tech University Libraries’ online catalog. Eight percent (one student) answered question nine correctly in the pre-assessment survey, thus indicating that he or she was aware that full-text magazine articles cannot be found in the catalog. Thirty-one percent answered this question correctly in the post-assessment survey. Question Ten asked the students which of two databases—ABI/Inform or Lexis-Nexis Academic Universe—contained full-text newspaper articles. Thirty-eight percent identified the correct answer (Lexis-Nexis Academic Universe) in the pre-assessment survey, and 77 percent did so in the post-assessment survey. Much improvement between pre- and post-assessments took place on Question Ten, most likely because one of the course’s practicums required the students to find full-text articles in Lexis-Nexis Academic Universe.

Most of the students did well on Question Eleven in both the pre- and post-assessment surveys. This question required knowledge of the difference between PDF and HTML full-text documents. Sixty-nine percent of the students answered the question correctly in the pre-assessment survey and 85 percent did so in the post-assessment survey. Question Twelve asked the students to examine a citation to a journal article and identify its citation style. MLA was the correct answer. Sixty-two percent of the students answered the question correctly in the pre-assessment survey, and likewise 62 percent did so in the post-assessment survey. The students got experience using these two style manuals for guidance in citing sources in their required annotated bibliography project.

Most of the students did well on Question Thirteen and could identify the features of an annotated bibliography. Sixty-nine percent of the students answered this question correctly in the pre-assessment survey, and 92 percent did so in the post-assessment survey. Question Fourteen asked “What information is contained in a bibliographic citation.” Seventy-seven percent answered Question Fourteen correctly in the pre-assessment survey, and 92 percent did so in the post-assessment survey. Question Fifteen asked which statements were correct in a list that included two citations, an ISBN number, a URL address, and a call number. The students did not do well on this question in the pre-assessment survey. However, much improvement took place on this question in the post-assessment survey. Not a single student identified the correct statements in the pre-assessment survey. Sixty-nine percent did so in the post-assessment survey.

**Discussion**

The 13 distance students surveyed in the fall of 2009 increased their group average score by 25 points from pre- to post-assessment. This indicates that they learned something in the course. In fact, they learned several of the teaching points the instructors wanted them to learn. The students improved their scores on 12 of the 15 questions in the post-assessment survey. In addition, one other question—Question Five—was answered correctly by all the students in both surveys. Two of the questions—Questions Two and Twelve—received the same number of correct answers in both the pre- and post-assessments, eight percent for Question Two and 62 percent for Question Twelve. Eleven of the questions in the post-assessment were answered correctly by a majority of the students, and four questions—Questions Two, Four, Eight, and Nine—were answered incorrectly by a majority of the 13 students. The poor performance on these four questions indicates that many of the students need to learn more about online catalogs. Also, they need to learn how to read and understand citations, call numbers, and other kinds of bibliographic numbers that they will encounter during their research.

What must the librarian instructors who teach the distance section of LIBR 1100 do to increase still more the learning that takes place in their section? In chapter one of her book *Tools for Teaching*, Barbara Gross Davis maintains that, “in designing or revising a course, faculty must consider what material to teach, how best to teach it, and how to ensure that students are learning what is being taught” (Gross Davis, 2009, p. 3-18). Starting with this introductory statement, she then offers strategies meant to help faculty “make decisions about the content of their course, the structure and sequence of activities and assignments, the identification of learning outcomes, and the selection of instructional resources” (Gross Davis, 2009, p. 3-18). The instructors of LIBR 1100’s distance section decided to use Dr. Gross Davis’ strategies as an aid in developing their course. First, they want to continue the process they started in 2008.
Each summer, in preparation for teaching in the fall and spring semesters, they plan to meet and agree on what is important for their students to learn. Once they have agreed on what is important, the instructors plan to review the course and, where needed, improve it and bring it up-to-date. During this review, they intend to examine the previous year’s assessment survey data and use the findings revealed by the data to help them decide what needs to be changed. The course’s continuous development must include revising all course goals, outcome objectives, the course syllabus and schedule, reading assignments, practicums, and quizzes, and writing new materials for added content. Each year, after the course is revised, the instructors need to develop a valid testing instrument that will gauge how well the students are learning what the instructors want them to learn (McMillan, 2001, p. 56-75). The instructors believe that the pre- and post-assessment surveys worked well again this year. However, there are other ways to assess including, but not limited to, a final examination, a portfolio assignment, or use of a standard test.

If the decision is made to continue using pre- and post-assessment surveys, valid survey questions should be determined using a pedagogically sound method, and the instructors need to make sure that the teaching points addressed by all the questions are covered in the course’s reading assignments and practicums (Gross Davis, 2009). In an effort to incorporate active learning into the course, the instructors of LIBR 1100 designed practicums that required the students to use databases, Websites, and other mainly online resources to fulfill the requirements of the assignment (Wexler & Tinto, 2005; Lang, 2008, p. 43-61). These practicums proved effective in teaching students content. Several of the questions in the survey that were answered correctly by more students in the post-assessment survey than in the pre-assessment survey tested specific teaching points the students had learned by doing the practicums. The instructors had previously been concerned about having too many practicums for a one-hour credit course. Perhaps, instead of adding more of them, existing practicums could be expanded to include two or more teaching points addressed in the questions. Also, when revising the reading assignments, the teaching points should be treated in relatively prominent locations within the assignments.

Finally, the librarians teaching the distance section of LIBR 1100 must “teach” the teaching points covered by the survey questions at appropriate times during the semester (Erickson, Peters, & Strommer, 2006, p. 87-100). One way to do this is through carefully prepared scripts explaining each teaching point addressed in a survey question. The scripts could be included among the tools and teaching aids that the instructors refer to during their instructor-directed online chat sessions. This practice should assist in reinforcing the learning (Erickson et al., 2006, p. 87-100). Above all, great emphasis should be placed on reviewing the course and its learning-outcome goals every year, and improvements should be made when appropriate.

The emphasis on student learning-outcomes assessment and the inclusion of information literacy in the efforts of colleges and universities to assess their programs and courses have led to the publication of several articles, books, and other materials that provide a generic treatment of assessment applied to Information Literacy. Also, articles are available that report on studies that assess student learning in the traditional classroom. Access to these materials is readily available in the Library profession’s information resources. On the other hand, reports of research on the experiences of individual library programs in assessing what distance students are learning in their information literacy classes are not well represented in the literature. This is unfortunate because librarians who want to improve the distance learning element of their information literacy program through assessment can benefit immensely from the experiences of their colleagues at other institutions. It is this kind of literature that would enable them to determine what methods work best and how the assessment process is used to improve distance teaching and learning. The authors of this article hope that the information they have reported here will serve to encourage other librarian instructors involved in distance education to do learning-outcomes assessment and report what they have learned.
References


Appendix A

Survey Questions and the Pre- and Post-Assessment Results

**Question 1**
What are the 3 Boolean operators?

PR = Pre-Assessment  
PO = Post-Assessment

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<thead>
<tr>
<th></th>
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<th>Percent</th>
<th>PO-1 Frequency</th>
<th>Percent</th>
</tr>
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<td>Incorrect</td>
<td>9</td>
<td>69</td>
<td>2</td>
<td>15</td>
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**Question 2**
What is the least likely resource to use to find citations to articles?

PR = Pre-Assessment  
PO = Post-Assessment

<table>
<thead>
<tr>
<th></th>
<th>PR-2 Frequency</th>
<th>Percent</th>
<th>PO-2 Frequency</th>
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<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Incorrect</td>
<td>12</td>
<td>92</td>
<td>12</td>
<td>92</td>
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</table>
Question 3
In determining the authority of an Internet site, you should look for:

PR = Pre-Assessment
PO = Post-Assessment

a – Author’s credentials
b – Preferred URL (like .edu, .gov, .org)
c – Sentence or paragraph stating that the information is authoritative
d – a & b

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</tr>
<tr>
<td>Incorrect</td>
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<td>0</td>
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Question 4
Which of the following statements are correct?

PR = Pre-Assessment
PO = Post-Assessment

a – 0-415-01987-7 is a call number.
b – C100.B34 1991 is a World Wide Web (URL) address.
c – Kerbel, Mathew, “Remote and Controlled Media Politics in a Cynical Age,” Westview, 1995 is a citation to a book.
d – Kerbel, Mathew, “Remote and Controlled Media Politics in a Cynical Age,” Westview, 1995 is a citation to a journal article.
e – http://www.bgsu.edu/colleges/library is a World Wide Web (URL) address.

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<td>92</td>
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<th>PO-4</th>
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<tr>
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<td>8</td>
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Question 5
Which of the following word searches would give you books most directly related to gang violence?

PR = Pre-Assessment
PO = Post-Assessment

a – Gangs AND violence
b – Gangs OR violence
c – Gangs AND NOT violence

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<th>Frequency</th>
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<tr>
<td>Incorrect</td>
<td>0</td>
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Question 6
Which of the following are primary research sources?

PR = Pre-Assessment
PO = Post-Assessment

a – Book on constitutional law
b – Copy of the United States Constitution
c – Book of Toni Morrison’s poems
d – Book that interprets Toni Morrison’s poems
e – Book of letters written by Abraham Lincoln
f – Biography of Abraham Lincoln

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<td>62</td>
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<tr>
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<td>5</td>
<td>38</td>
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Question 7
Identify which of the following are typical of scholarly research sources.

PR = Pre-Assessment
PO = Post-Assessment

a – Articles geared to a general audience
b – Articles with bibliographies and footnotes
c – Articles geared to researchers
d – Articles meant to inform and entertain
e – People Magazine
f – Educational Psychology Review

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Question 8
Which of the following kinds of information can be found in the Library’s online catalog?

PR = Pre-Assessment
PO = Post-Assessment

a – Journal articles on a certain topic
b – Journals the Library owns
c – Books on a certain topic
d – Book reviews
e – Sound recordings the library owns

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Question 9
It is possible to find full-text magazine articles in the Library’s online catalog.

PR = Pre-Assessment
PO = Post-Assessment

a – True
b – False

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Question 10
Which research database contains full-text newspaper articles?

PR = Pre-Assessment
PO = Post-Assessment

a – ABI/Inform
b – Lexis-Nexis Academic Universe

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Question 11
When accessing an article from the database Academic Search Complete, which format leads you to a display that looks like a photocopy?

PR = Pre-Assessment
PO = Post-Assessment

a – PDF full-text
b – HTML full-text

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Question 12

PR = Pre-Assessment
PO = Post-Assessment

a – MLA
b – APA
c – Turabian
d – Chicago

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Question 13
What is an annotated bibliography?

PR = Pre-Assessment
PO = Post-Assessment

a – List of reference sources on animation
b – List of references with summaries of each
c – Book with hand-written notes in the margins of pages
d – List of citations to books with the author’s signatures included in the citations

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Question 14
What information is contained in a bibliographic citation?

PR = Pre-Assessment
PO = Post-Assessment

a – Credentials, revisions, date of publication
b – Author, title, publication information
c – Revisions, title, publisher

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</table>

Question 15
Which of the following statements are correct?

PR = Pre-Assessment
PO = Post-Assessment

a – Saunders, Laverna, “The Virtual Library Today,” Library Administration and Management 6, no. 2 (Spring 1992): 245-254 is a citation for a journal article.
c – 0-415-01987-7 is a call number.
d – http://www.bgsu.edu/colleges/library is a citation for a book.

<table>
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Appendix B

ACRL Information Literacy Competency Standards for Higher Education with Their Performance Indicators

Standard One
The information literate student determines the nature and extent of the information needed.

Performance Indicators
1.1 The information literate student defines and articulates the need for information.
1.2 The information literate student identifies a variety of types and formats of potential sources for information.
1.3 The information literate student considers the costs and benefits of acquiring the needed information.
1.4 The information literate student reevaluates the nature and extent of the information need.

Standard Two
The information literate student accesses needed information effectively and efficiently.

Performance Indicators
2.1 The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.
2.2 The information literate student constructs and implements effectively-designed search strategies.
2.3 The information literate student retrieves information online or in person using a variety of methods.
2.4 The information literate student refines the search strategy if necessary.
2.5 The information literate student extracts, records, and manages the information and its sources.

Standard Three
The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Performance Indicators
3.1 The information literate student summarizes the main ideas to be extracted from the information gathered.
3.2 The information literate student articulates and applies initial criteria for evaluating both the information and its sources.
3.3 The information literate student synthesizes main ideas to construct new concepts.
3.4 The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.
3.5 The information literate student determines whether the new knowledge has an impact on the individual’s value system and takes steps to reconcile differences.
3.6 The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.
3.7 The information literate student determines whether the initial query should be revised.
**Standard Four**
The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

**Performance Indicators**
4.1 The information literate student applies new and prior information to the planning and creation of a particular product or performance.
4.2 The information literate student revises the development process for the product or performance.
4.3 The information literate student communicates the product or performance effectively to others.

**Standard Five**
The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

**Performance Indicators**
5.1 The information literate student understands many of the ethical, legal, and socio-economic issues surrounding information and information technology.
5.2 The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
5.3 The information literate student acknowledges the use of information sources in communicating the product or performance.
Revelations of an Off-Campus User Group: Library Use and Needs of Faculty and Students at a Satellite Graduate Social Work Program

Lizah Ismail
Marywood University

Abstract
The popularity of the Graduate Social Work Satellite Program at Marywood University has led the library to re-examine its services to both students and faculty in the program. The library realizes that current services may not apply to those who are not on campus regularly or at all. Using data from two studies that surveyed both traditional and non-traditional students and faculty, this new study seeks to determine: What do satellite students and faculty specifically want? What do they find unhelpful? What impact does faculty library use have on their students? Findings from this study are revealing and point to further directions for research.

Introduction
Non-traditional programs in academic institutions are becoming increasingly prevalent. As more and more individuals go back to school to learn new skills and prepare for new careers, distance, online and/or satellite programs have sprung up in many colleges and universities (Nicholas & Tomeo, 2005). Such alternative learning opportunities are perhaps the only ways these returning students are able to advance their educational objectives due to their work and other personal commitments.

The growth of these programs brings both fresh opportunities as well as unique challenges for academic libraries (Cahoy & Moyo, 2005; Cooper, Dempsey, Menon, & Millson-Martula, 1998; Ismail, 2009; Lee, 2004; Moyo & Cahoy, 2003, 2006). It goes without saying that libraries who are faced with an increasing distance user population are trying their best to meet the needs of this emerging user group. As the ACRL Guidelines for Distance Learning Library Services stipulate, “academic libraries must… meet the information and research needs of all these constituents, wherever they may be” (ACRL, 2004). The challenge for carrying this stipulation out successfully is therefore to get to know who our distance users are – their needs, wants, expectations, and habits with regard to the library, and if these are different from their traditional counterparts.

It is towards this end that the Marywood University Library conducted surveys of both traditional and non-traditional students and faculty in the Master of Social Work (MSW) program at Marywood. The student survey was conducted in Fall 2008 and findings suggest a marked difference in certain aspects of the library use and needs of traditional and non-traditional (Satellite and Weekend) MSW students (Ismail, 2009). The Marywood Library conducted a similar survey of MSW faculty in Spring 2009. A noteworthy finding here was that a majority of the faculty who teach non-traditional classes reported orientating their students to the library themselves, as opposed to having a librarian do so. This suggests that the issues non-traditional students are experiencing with the library, and which their traditional counterparts are not, are perhaps due to a lack of proper library orientation.

In light of the above results, a closer examination of the library use and needs of satellite students and faculty was warranted. Due to their unique perspectives as distance users, particularly on the students’ part, it is imperative that we at the library understand how we can serve them better. This paper presents findings that pertain only to satellite students and faculty in the MSW program gleaned from the two surveys mentioned above.
Overview of Marywood’s MSW Satellite Program

The Graduate Social Work satellite program at Marywood University in Scranton, Pennsylvania at the time of the study enrolled 191 students at three satellite locations. These satellite locations comprise of the Lehigh Valley Program at De Sales University in Allentown, Pennsylvania, the Reading Program at Alvernia College in Reading, Pennsylvania, and the Central Pennsylvania Program at Bloomsburg University, in Bloomsburg Pennsylvania. Each location is coordinated by a Program Director and is taught by both adjunct/part-time faculty members. At the time of this study, there are a total of 38 faculty members (full-time and part-time) in the MSW program, which is the only program at Marywood that offers distance education opportunities at remote sites.

With regard to library usage, most MSW faculty, whether based on the main campus or not, are rarely seen to frequent the library building. They do however make use of the library’s online resources such as the research databases and E-reserves. Satellite students have no reason to visit the Marywood University’s main campus in Scranton at all. Although it is natural for them to make use of the library on their remote campus site, due to proprietary issues, they still need to be familiar with and use Marywood’s library databases and online resources if they are doing their research from home or are no longer on their satellite campus. Furthermore, library services such as Interlibrary Loan and E-reserves are services they can only access from the Marywood Library’s website.

Although reference librarians at the Marywood Library often help both satellite students and faculty with their research, either via phone or email, there is no formal library orientation for the satellite program. As is the common practice with many academic libraries, the Marywood library has to take full advantage of “one-shot” sessions for any kind of library orientation to take place, including for graduate students. These usually occur at the faculty’s request, and even then, not many of the faculty members make use of this service.

Admittedly it is more difficult to schedule a session at a remote site. However, the library has accommodated at least one faculty member who teaches at a satellite location. We explored telecasting a library session but in light of the student survey results, we opted to experiment with a synchronous online session using Elluminate, an online collaborative tool. Both the faculty member and the librarian involved agreed that this method was more “hands on” for the satellite students. Due to technical glitches, the session was not as successful as was hoped to be, but we are going to continue to experiment with it. Another instructional tool that we introduced two years ago, specifically for the MSW satellite students, was an online tutorial which may be accessed from the library website. Camtasia was used to produce the online tutorial which was also sent as a link in the email we send to all MSW faculty every beginning of the semester regarding the availability of library assistance and instruction sessions for their satellite students.

It is clear that much more needs to be done to cater to our satellite users, both students and faculty. Results from the study presented in this paper will undeniably help the Marywood library, and potentially other academic institutions, more clearly identify challenges as well as appropriately address issues pertaining to library services for distance users.

Review of Literature

The growth of distance learning is matched by an equally growing body of library literature on the topic, of which several studies address the need for libraries to understand their distance users better (Adams, 2006; Block, 2007; Caspers, 1999; Cooper, et al., 1998; Dew, 2001; Ismail, 2009; Lee, 2004; Liu & Yang, 2004; Logon, Augustyniak, & Rees, 2002; Mabawonku, 2004; McLean & Dew, 2006; Nichols, 2006; Peterman & Schultis, 1995; Raven & Jimmerson, 1992; Rowland & Rubbert, 2001; Tipton, 2001; Tremblay & Zhonghong, 2008). Many of these studies focus on the student user. Other research studies direct their attention solely on faculty library use and needs (Behrens, 1993; Cahoy & Moyo, 2005; Caspers, 1999; Cook & Cook, 1991; Craig & Duford, 1995; Hulford, 2004; Kabel, 1995; Lebowitz, 1993; Schmehl Hines, 2006; Shaffer, Finkelstein, Woelfl, & Lyden, 2004).

Studies that explore both the student and faculty user are less abundant. Nicholas and Tomeo
(2005) addressed issues pertaining to the awareness of distance students and faculty of library services. They claimed recent surveys found a significant lack of awareness of what library services are available to distance users. As a result, they proceeded to conduct “a study of library websites at 100 distance learning institutions” as a way of compiling the “best practice” regarding “effective distance education gateway”. Their finding revealed that “simply providing access” to library resources is “insufficient”, and that an essential checklist that includes a prominently featured distance library gateway on the library homepage is important, as well as marketing relevant library resources and services to distance users.

Peterman and Schultis (1995) measured the quality of library service to off-campus users at Park College near Kansas City, Missouri. A survey was administered at the off-campus learning sites to college administrators, faculty, students, and librarians. An interesting finding is that although a majority of non-student users agree that “library needs are being met” by distant users, only 50% of the students surveyed responded in a similar fashion. Another noteworthy finding indicates that large numbers of these student users also make use of other libraries nearby. This suggests the need for better outreach and better access to the “home campus database”.

An early study done by Ruddy (1993) explored the possibility of a “connection” between distance faculty and students’ library use and needs in her aptly titled paper, “off-campus faculty and students perceptions of the library – are they the same?” Her stipulation was that students will value and use the library if their professors do. Two surveys were conducted within a span of eight years, the first being a student survey undertaken in 1985, and the second survey which were given to both faculty and students was conducted in 1993. These surveys were distributed across the three off-campus sites of Cardinal Stritch College in Wisconsin. Her findings were inconclusive but point to the fundamental need to understand distant faculty and student perceptions of the library and to increase outreach efforts to them.

In a similar vein, a recent study by Moyo and Cahoy (2006) investigated library needs and expectations of distance students and faculty at Penn State’s World Campus. A student survey was conducted in 2002 and a faculty survey two years later. Moyo and Cahoy emphasized the importance of surveying both these groups of distance users particularly as they believed that faculty has a role in “influencing and shaping their students’ use or non-use of the library” (p. 350). A significant finding was the disparity between how students perceive their ability to do library research and how faculty perceive their students’ ability to do library research. A common perception however of both faculty and students is their lack of awareness of the “wealth of library resources and services afforded them” (p. 352). Like Ruddy, they also concluded that marketing and publicizing what the library has available to distance users is of paramount importance.

The importance of outreach and marketing library services to distance users has been a recurring theme in many studies, but it bears particular significance if findings also suggest that faculty may have some if not great influence on how their students use the library. Behrens (1993) called faculty possible “obstacles” to library user education for distance students. She reasoned that faculty’s attitudes regarding the need for their students to “possess” library skills could either encourage or deny user education for their students, and ultimately present an obstacle for their students to use the library appropriately or at all. Her conclusion emphasized the value of understanding the faculty “culture” librarians are faced with and forming a “partnership” or collaboration between librarians and faculty so that the library could be involved in students’ learning process.

This notion of collaboration is taken further to include the communities beyond the home institution. Caspers (1999) asked “when the distance education instructor sends students to the library, where do they go?” Her paper outlines the importance of not only knowing who your distance learner user group or distance education community is, but also to undertake outreach efforts and forge partnerships beyond the home campus community. As many studies indicate, distance users already using other libraries. Forging partnerships with other libraries located near the remote distance learning sites as well as with other colleges in the same area would only enhance the distance users’ learning experience.
Methodology

The student survey was conducted in Fall 2008 and the faculty survey in Spring 2009. The student survey was sent to an email listserve of all currently enrolled MSW students. Hard copies of the survey were also distributed to students via their course instructor if requested. The faculty survey was sent via email.

Both surveys utilized the online survey tool, SurveyMonkey, to which Marywood University has a professional subscription. This enables researchers to collect unlimited anonymous responses as well as to analyze and filter results as needed. A professional subscription also allows results to be downloaded into a variety of formats, including Excel.

The survey instruments contained questions that solicited demographic as well as user information pertaining to library services, resources and access (see Appendices A & B). In addition, faculty were asked to respond to questions regarding their perception of students’ awareness of library resources. They were also asked to relay if they expected their students to conduct research. The survey instruments were approved by Marywood University’s Institutional Review Board.

Results of Student Survey

The results of this survey were part of a larger study published in the Journal of Academic Librarianship (Ismail, 2009). At the time of the study, there were 191 MSW satellite students enrolled in the three remote sites. Although only 22 (11.5%) of these students responded to the survey, responses collected did provide valuable insight into the library use and needs of these students.

Demographics

Of the 22 respondents in this group, 13 (59.1%) were returning students while nine (40.9%) were new. When attendance at a library instruction session was taken into consideration, a majority of returning students (61.5%) reported having had a library session while a majority of new students (77.7%) reported having not had any (see Figure 1).

![Figure 1](image.png)

*Figure 1. Demographic breakdown of returning and new satellite students, taking into account their library session attendance.*
Library Use

Library website

A great majority of satellite students surveyed (86.4%) indicated that they used the Marywood Library website to complete their assignments (see Figure 2). Some of these students (68.2%) also indicated using the libraries located close to their homes. As can be expected, none of the satellite students reported going to the main campus to use the Marywood Library. Five (22.7%) indicated going elsewhere such as to the library on their satellite campus and using resources in their place of work.

![Research Destinations](image)

Legend:
- Satellite Students (n=22)

Figure 2. Depicts where satellite students go to complete their class assignments.

Library resources

With regards to most used library resource, almost 91% of the respondents reported using the library’s online journals. The next popular resource was the library’s research databases (81.8%) followed by the library online catalog (68.2%) (see Figure 3). Almost half (45.5%) of the respondents reported using the library interlibrary loan service while only three students (13.6%) indicated using the library’s reference email/chat service.
Figure 3. Library resources most used by satellite students.

Locating/Accessing library resources

When asked to indicate the level of difficulty or ease in either locating or accessing library resources, a majority of the students (70%) who indicated having had library instruction reported no difficulty in locating library resources with three (30%) choosing “neutral” (see Figure 4). Interestingly, the reverse is true for those who reported not having had any library instruction, with only four (33.3%) indicating that they found locating library resources “easy”. Five (41.7%) chose “neutral” while two (16.7%) found it difficult and one (8.3%) found it very difficult.
Figure 4. A comparison of the level of difficulty in locating library resources experienced by students who have attended a library session and those who have not.

Similarly, students who reported not having had any library instruction indicated having the most trouble accessing library resources as well (see Figure 5). Although four respondents (33%) found accessing library resources “easy” with an equal number reported having difficulty doing so, two respondents (16.7%) reported doing so “very difficult”. Conversely, a majority of those that indicated having had library instruction found accessing library resources “easy” or chose the “neutral” option, with only two (20%) reported having difficulty.
Library staff

Slightly more than fifty-four percent (54.5%) chose “neutral” when asked to rate helpfulness of library staff (see Figure 6) while six respondents (7.3%) reported that they found library staff to be helpful. Only two (9.1%) reported library staff to be very helpful, and the same number reported library staff to be unhelpful.

Figure 5. A comparison of the level of difficulty in accessing library resources experienced by students who have attended a library session and those who have not.
Half of the satellite students surveyed (n=11) named the library’s online databases as the most useful library resource (see Table 1). Having off campus access to library resources was next in usefulness/helpfulness (n=4) followed by the library’s interlibrary loan service (n=2) and full text journals (n=1), with four respondents opting not to answer this question. A majority of respondents (n=12) voiced their frustration and difficulty in accessing and/or searching for full text articles (see Table 2). Accessing other library resources also appear to be an issue with a few students (n=3). However, nine students opted not to report what they found least useful or helpful.

Table 1

*Most useful/helpful library resource (Satellite student)*

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<td>Off campus access</td>
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<td>Full text articles/online journals</td>
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*Note.* Totals may exceed number of respondents because multiple responses were encouraged.
Table 2

Least useful/helpful library resource (Satellite students)

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<tr>
<td>Full text access/search</td>
<td>12</td>
</tr>
<tr>
<td>Access to other resources</td>
<td>3</td>
</tr>
<tr>
<td>ILL</td>
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Note. Totals may exceed number of respondents because multiple responses were encouraged.

Library Needs

Several of the respondents (n=8) requested for more full text and/or online library resources with four respondents mentioning a need to improve access to full text and other online library resources (see Table 3). Again, a large number of respondents (n=10) provided no comment.

Table 3

Areas that need improvement (Satellite students)

<table>
<thead>
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<th>Number of Respondents</th>
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<tbody>
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<td>Access issues</td>
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<td>ILL</td>
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<td>Library Orientation</td>
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</table>

Note. Totals may exceed number of respondents because multiple responses were encouraged.

Results of Faculty Survey

Several MSW faculty teach courses in the various programs offered (i.e., weekend, night and satellite) and may do so interchangeably from semester to semester. The survey was sent to 38 MSW faculty including full-time and part-time faculty. The library obtained 15 responses (39.5%), of which eight were from faculty who taught in the satellite program.

Demographics

Out of the 8 satellite faculty respondents, 62.5% (n=5) were full-time and 37.5% (n=3) were part-time. In terms of where they taught, 60% (n=3) of full-time faculty taught regular classes in Scranton or main campus, 40% (n=2) also taught in the Weekend program in Scranton and 40% (n=2) in online courses while all five of them taught in the Satellite program (see Figure 7). Only one (20%) full-time faculty member indicated teaching night classes in Scranton. As for part-time faculty, all three faculty members
reported teaching in the Satellite program. One respondent (33.3%) also reported teaching online courses with the same number reporting teaching weekend courses as well.

![Figure 7. A comparison of full-time and part-time satellite faculty teaching locations.](image)

All of the full-time MSW faculty respondents indicated that they have been teaching in the MSW program for more than five years (see Figure 8). Roughly sixty-six percent (66.7%) of part-time faculty have been in the MSW program 2-5 years, with one respondent (33.7%) reporting being new to the program.

![Figure 8. A comparison of full-time and part-time satellite faculty's years of teaching experience.](image)
Library Research Requirements and Expectations for Students

Assignments

Both full-time and part-time faculty reported unanimously that they require research for their class assignments. Both groups also indicated that these assignments include papers, group projects and presentations (see Figure 9).

![Figure 9. Type of research assignments given to students by full-time and part-time satellite faculty.](image)

Where students go

When asked where they expect their students to do their research, both groups again agreed unanimously that the Marywood Library and its resources as the research destination of choice (see Figure 10). Four of the full-time respondents (80%) indicated the Internet and three (60%) indicated going to other libraries. All of the part-time respondents (n=3) however expected their students to also use the internet with one (33.3%) indicating other libraries.
Figure 10. Full-time and part-time satellite faculty's expectations regarding where students go when researching for their class assignments.

Students’ Awareness of library resources

Interestingly, all of the part-time faculty surveyed (n=3) reported that they felt their students were aware of Marywood Library’s resources and services (see Figure 11) while two of the full-time faculty (40%) reported the same. Forty percent also indicated that they were not sure if their students were aware of the library’s resources and services with one (20%) reporting that they felt their students were unaware of what’s available for them at the library.

Figure 11. Full-time and part-time satellite faculty's perception of whether their students are aware of library resources and services.
**Library orientation**

100% (n=5) of the full-time respondents indicated that they provided information about the library’s resources and services themselves orally with 60% (n=3) reporting using handouts, and 40% (n=2) reporting that they demonstrated the use of library resources to their students themselves (see Figure 12). Only 20% reported having a librarian conduct a formal library instruction session. All part-time respondents (n=3) reported providing information about the library via their syllabi and handouts as well as orally in class.

![Figure 12. A comparison of how full-time and part-time satellite faculty orientate their students to the library.](image)

**Library Use**

**Library resources**

All three part-time respondents reported using the library’s online catalog, the library’s research databases, and e-reserves, with one respondent (33.3%) reported also using the Interlibrary Loan service and one respondent (33.3%) reported also using the library’s online full text journals (see Figure 13). None indicated using the library’s reference email/chat service or the librarian consultation service. Conversely, 40% (n=2) of the full-time respondents indicated using each of these services while a majority of full-time faculty 80% (n=4) indicated using the library’s online catalog, research databases and online journals. All of the full-time respondents indicated using the library’s e-reserves.
Locating/Accessing library resources

When asked to indicate the level of difficulty or ease in either locating or accessing library resources, a majority (60% or n=3) of the full-time faculty surveyed reported that they found locating library resources to be “easy” while 40% (n=2) opted to be neutral (see Figure 14). As for part-time faculty, one (33.3%) indicated that they found locating library resources to be “very easy”, one (33.3%) found it “difficult” and one (33.3%) remained neutral.

Figure 13. A comparison of full-time and part-time faculty's use of library resources

Figure 14. The level of difficulty full-time and part-time satellite faculty experience in locating library resources.
Part-time faculty found it more difficult to access library resources with 66.7% (n=2) of those surveyed indicating this activity to be “difficult”, with one (33.3%) respondent reporting this activity to be “very easy” (see Figure 15). Full-time faculty did not find accessing library resources difficult.

![Figure 15](image)

**Figure 15.** The level of difficulty full-time and part-time satellite faculty experience in accessing library resources.

**Library staff**

A majority of full-time respondents reported library staff to be either “very helpful” (40% or n=2) or “helpful” (40% or n=2) (see Figure 16). Two of the part-time respondents (66.7%) opted for “neutral” when asked this question, while one respondent (33.3%) indicated that library staff was “very helpful”.

![Figure 16](image)

**Figure 16.** Full-time and part-time faculty's ratings of their experience with library staff.
**Most and Least useful/helpful library resource**

Online full-text journals were found to be most useful to full-time respondents (n=3) with the library’s databases, library orientation, librarian help, the library’s book collection and e-reserves given equal distinction, at 1 response each (see Table 4). Part-time respondents only mentioned the online databases as most useful (n=2) with one respondent not commenting.

Full-time respondents reported having issues with off campus access and off campus library service (see Table 5) with one respondent being unhappy with the library’s in-house journals, and one respondent not commenting. Part-time respondents were frustrated with what they deemed to be the library’s dated social work collection (n=1) and the difficulty in physically navigating the library stacks (n=1).

Table 4

**Most useful/helpful library resource (faculty)**

<table>
<thead>
<tr>
<th>Library Resource</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FT</td>
</tr>
<tr>
<td>Online databases</td>
<td>1</td>
</tr>
<tr>
<td>Library Orientation</td>
<td>1</td>
</tr>
<tr>
<td>Librarian Help</td>
<td>1</td>
</tr>
<tr>
<td>Full text articles/online journals</td>
<td>3</td>
</tr>
<tr>
<td>Books</td>
<td>1</td>
</tr>
<tr>
<td>Online reserves</td>
<td>1</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Totals may exceed number of respondents because multiple responses were encouraged.

Table 5

**Least useful/helpful library resource (faculty)**

<table>
<thead>
<tr>
<th>Library Resource</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FT</td>
</tr>
<tr>
<td>Irrelevant/Dated materials</td>
<td>0</td>
</tr>
<tr>
<td>In-house library Stacks</td>
<td>0</td>
</tr>
<tr>
<td>In-house journals</td>
<td>1</td>
</tr>
<tr>
<td>Off-campus access</td>
<td>1</td>
</tr>
<tr>
<td>Off-campus library service</td>
<td>1</td>
</tr>
<tr>
<td>N/A</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note.* Totals may exceed number of respondents because multiple responses were encouraged.
**Library Needs**

Full-time faculty surveyed would like to see improvement in library services to off-campus users (n=2) with improvements also requested in the areas of off-campus access, full-text journals availability and the library website (see Table 6). Areas of concern for part-time faculty also includes the need for better off campus library services (n=1) and a more current library social work collection (n=1).

Table 6

*Areas that need improvement (faculty)*

<table>
<thead>
<tr>
<th>Library Resource</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of full-text articles</td>
<td>1    0</td>
</tr>
<tr>
<td>Off-campus access</td>
<td>1    0</td>
</tr>
<tr>
<td>Off-campus library service</td>
<td>2    1</td>
</tr>
<tr>
<td>Library Website</td>
<td>1    0</td>
</tr>
<tr>
<td>Social Work collection</td>
<td>0    1</td>
</tr>
<tr>
<td>N/A</td>
<td>0    1</td>
</tr>
</tbody>
</table>

*Note.* Totals may exceed number of respondents because multiple responses were encouraged.

**Discussion**

Although the response rate for the student survey was more than 10%, it was still disappointing not to have obtained more. The total response rate for the faculty survey, however, was relatively high at almost 40%, with more than half of that number being responses from satellite faculty. Together, the findings suggest a trend that is both striking and troubling.

Both full-time and part-time faculty indicated that research is required for all of their assignments and that their preference is for their students to use Marywood Library’s resources. A noteworthy finding is that part-time faculty appeared more confident that their students are aware of what is available at the Marywood Library than their full-time counterparts. And although both groups reported using a variety of important library resources, part-time faculty appeared to have more difficulty in locating and accessing these resources. (*Locating* library resources implies knowing where to go to find these resources while *accessing* library resources implies obtaining and retrieving these resources).

Both groups also showed a preference for providing “library instruction” to their students themselves (only one reported calling a librarian to provide such instruction). Although this finding is disappointing, it is hardly unexpected. Marywood Library recognizes the lack of a structured library instruction program for satellite students and faculty, and the difficulty in having “live” sessions at remote sites. A plan is underway to use synchronous online software to conduct such sessions and to use course management software such as Moodle to reach out to these users.

However, the above results become worrying when examined alongside students’ responses. A large majority of satellite students surveyed who reported having had library instruction found no difficulty either locating or accessing library resources with a very small minority indicating that they had some
difficulty. The reverse is true for those who reported not having had any library instruction. But when asked to comment on what they found “least useful”, surprisingly, a large majority of students, with or without library instruction, expressed frustration at their inability to search for and/or access full-text articles. Clearly, whatever library instruction these students reported they had, it was probably given to them by their instructors who themselves, were not well informed.

It is without a doubt that Marywood Library needs to urgently address this issue. As mentioned above, the library is already making some progress. These findings provide a sobering reminder of the library’s continuing struggle to provide dependable service to remote users. Educating the faculty should be of prime importance. Reaching out to satellite faculty by way of a formal faculty orientation to the library and having faculty workshops are the steps in the right direction, and should be implemented. The finding that part-time faculty found the library’s social work collection to be “outdated” is almost certainly due to the fact that these faculty members were not formerly introduced to the library and its resources.

The request from both faculty and students for more online full text resources is well taken. Marywood Library would definitely benefit from subscribing to more online resources. However, fiscally speaking, this may not be possible. Again, this request for more online full text resources could also conceivably stem from a lack of awareness of what the library actually has and/or from a lack of awareness of how to access what the library has and of the library’s interlibrary loan service.

In light of the above findings, Marywood Library plans to undertake a second study of satellite students and faculty with the hopes of obtaining a higher response rate, particularly for students. This second study may comprise of focus groups that will take place in conjunction with another survey. By conducting focus groups, the library anticipates a closer examination of issues and a more candid assessment of what these users need, and how the library can help meet those needs.

**Conclusion**

This study has provided valuable insight into the challenges the Marywood Library faces in providing services to its remote users. Most significantly, this study suggests the possibility that a satellite student’s use and knowledge of library resources and services is likely associated with his/her faculty’s own use and knowledge of the library. It is therefore imperative that, as discussed above, the Marywood Library implements a structured program of library orientation for both faculty (particularly for part-time faculty) and students. A follow-up study which may include focus group interviews of satellite faculty and students could determine the preferred method of delivering these library orientation sessions – whether online or in-person. Hopefully, such measures will greatly improve both satellite faculty and students’ experiences with, and knowledge, of the library.
References


Ismail, L. (2009). What they are telling us: library use and needs of traditional and non-traditional students in a graduate social work program. Journal of Academic Librarianship, 35(6), 555-564.


Tipton, C. J. (2001). Graduate students' perceptions of library support services for distance learners: A university system-wide study. *Journal of Library Administration, 32*(1/2), 393-408.

Appendix A

Survey Instrument

Library Needs and Library Satisfaction Survey of Marywood University Social Work graduate students

I. Demographics

1. I am:
   a. a Full Time on campus student
   b. a Part-Time and/or Night student
   c. a Weekend student
   d. a Satellite program student

2. I am:
   a. a returning student
   b. an incoming or new student

3. I have:
   a. attended a library instruction session
   b. not attended a library instruction session

II. User/Satisfaction survey

1. In order for you to complete your Social Work course assignments (circle all that apply):
   a. You visit the Marywood Library
   b. You visit the Marywood Library website
   c. You visit other libraries nearer to your home location
   d. Other: ________________________________

2. Which Marywood Library resources have you used? (Please circle all that apply)
   a. Online Library Catalog
   b. Research databases (such as Wilson Web, PsycINFO, Social Work Abstracts)
   c. Ask-A-Librarian service (email/chat)
   d. Reference consultation with a librarian (either by phone or in-person)
   e. Inter-library loan services
   f. Electronic Reserves
   g. Online Full Text Journals

3. How easy is it for you to:
   a. locate the resources you need?
      Very Easy   Easy   Neutral   Difficult Very Difficult
   b. access or obtain these resources?
      Very Easy   Easy   Neutral   Difficult Very Difficult

5. How helpful is the library in providing support or assistance to you when finding and getting what you need for your course assignments?
a. Very Helpful  
b. Helpful  
c. Neutral  
d. Not Helpful  
e. Most Unhelpful

6. Which library resource(s) and/or service do you find most useful and helpful? (please name all that apply)

7. Which library resource(s) or /and service do you find least useful or helpful (please name all that apply)

8. What would you like to see implemented or improved in the library to meet your needs better?
Appendix B

Library Survey

Library Use and Needs of Marywood’s Graduate Social Work Program Faculty

I. Demographics

1. I am:
   a. Full Time Faculty Member
   b. Part-Time/Adjunct Faculty member or Instructor

2. I teach:
   a. Graduate courses only
   b. Graduate and Undergraduate courses
   c. Other (please specify)

3. Choose all that apply. I teach:
   a. Courses on campus in Scranton
   b. Course on campus in Scranton/evenings and nights
   c. Courses on campus in Scranton/Weekend Program
   d. Courses on a satellite campus
   e. Online courses
   f. Other (please specify)

4. How long have you taught at Marywood?
   a. This is my first year
   b. 2-5 years
   c. More than 5 years

II. User Survey

1. Do your courses require students to do any research beyond using their textbooks and other required readings?
   a. Yes
   b. No

2. What types of assignments in your courses require research?
   a. Papers
   b. Group projects
   c. Presentations
   d. Other (please specify)

3. Where do you expect your students to obtain information for their research assignments? Please indicate all that apply.
a. Marywood Library resources (online and/or print)
b. Resources from other libraries located near students' homes
c. Internet
d. Other (please specify)

4. Do you feel that your students are aware of Marywood library resources and services?
   a. Yes
   b. No
   c. Not Sure

5. Your students are made aware of Marywood Library resources and services by the following means (please indicate all that apply):
   a. Instructor relays information in class via syllabus/handouts
   b. Instructor informs students in class orally
   c. Instructor demonstrates use of Marywood Library resources to students
   d. Instructor invites a librarian to present a library instruction session to students
   e. Other (please specify)

6. Which Marywood Library resources have you used? (Please choose all that apply)
   a. Online Library Catalog
   b. Research databases (such as Wilson Web, PsycINFO, Social Work Abstracts)
   c. Ask-A-Librarian service (email/chat)
   d. Reference consultation with a librarian (either by phone or in-person)
   e. Inter-library loan services
   f. Electronic Reserves
   g. Online Full Text Journals

7. How easy is it for you to locate the resources you need?
   a. Very Easy
   b. Easy
   c. Neutral
   d. Difficult
   e. Very Difficult
   f. Not Applicable

8. How easy is it for you to access or obtain these resources?
   a. Very Easy
   b. Easy
   c. Neutral
   d. Difficult
   e. Very Difficult
   f. Not Applicable

9. How helpful is the library in providing support or assistance to you when finding and getting what you need for your course assignments?
   a. Very Helpful
   b. Helpful
   c. Neutral
10. Which library resource(s) and/or service do you find most useful and helpful? (please name all that apply)

11. Which library resource(s) or/and service do you find least useful or helpful? (Please name all that apply)

12. What would you like to see implemented or improved in the library to meet your needs better?
Angels and Demons: Online Library Instruction the Jesuit Way

Theresa Kappus
Kelly O’Brien Jenks
Gonzaga University

Abstract

Spirituality, reflection, community and cura personalis are not terms generally associated with library instruction, but they are commonly found in discussions of Jesuit education. In order to develop a library instruction course for online graduate students, two librarians at Gonzaga University were required to take the Competency Assessment in Distributed Education (CADE) Course Design Workshop developed by JesuitNET. Completion of the course portfolio involved thinking about desired competencies and evidence of student mastery, as well as reflecting on how the library course would adhere to themes of Jesuit pedagogy. Throughout the development of the Research Primer course, the efforts to unite spiritual contemplation and material content offered unusual challenges as did the demons of managing workload issues and dealing with academic protocol.

Background

Gonzaga College first opened its doors in 1887 as part of the Jesuit mission in Spokane, Washington. Today, Gonzaga University is a private, four-year institution whose mission statement continues to embrace the Catholic, Jesuit, humanistic ideals of its founders. Enrollment for the 2009-2010 academic year is just under 7700 students with 4729 undergraduates, 2261 Master’s students, 532 law students, 115 doctoral students and 45 non-credit students (Gonzaga University, 2009). The graduate courses in the School of Professional Studies, which include Master’s programs in nursing and organizational leadership along with doctoral studies, are part of the Jesuit Distance Education Network (JesuitNET). Jesuit colleges and universities in the United States work together through JesuitNET to distribute a variety of online academic courses and programs in the Jesuit tradition.

Jesuit Education

So what is different about a Jesuit education? While there is surely a utilitarian aspect to the transmission of knowledge and the Jesuits have that down, it is safe to say that Jesuit pedagogy is not as concerned with a school to work model (get an education and get a job) as it is with impacting the whole person (R. F. Reyes, personal communication, December 8, 2009). Cura Personalis (care of the whole person) is a theme that runs through every part of Jesuit life. It is educating from the inside out, teaching what it really means to be human. It is about what Martin Luther King, Jr. called the beloved community revolutionarily embracing and living the ideals of both love and justice, when he was writing 470 years after the Jesuits began their adventure (Inwood, 2009; Williams, 1990). It is the hope that this education in community will be transformative, in a non-evangelistic way, to head, hands and heart. In this model, a student’s potential and passion is brought out for the greater glory of God through the service of faith in the promotion of justice. As these three things (culture, faith and justice) intersect we have a frontier. Why is it important to live and work on this frontier? St. Ignatius would have answered that our reason for frontier living is to be an ambassador bringing the faith that does justice so that we cultivate and increase the amount of hope in love and truth in the world.

As we constructed our Research Primer, it was important to us to be true to mission in our work with on-line students since the faculty’s educational role at Gonzaga University is to model and mentor students through reflection toward transformation for the benefit of others. Our goal is always to remember
our human connection and responsibility to the world in need. Some distinguishing characteristics of Jesuit education that we considered in the creation of course materials are outlined in Table 1.

Table 1

*Characteristics of Jesuit Education*

<table>
<thead>
<tr>
<th>Community</th>
<th>Living and working in fellowship vs. isolation. Another aspect of community is the principle of presupposition where learners strive to put a positive interpretation on another’s view.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cura Personalis</td>
<td>“Care for the Person” St. Ignatius taught that on our path, a person needs “cura” the help of companions on the way. This is expressed in the human acts of giving and receiving and calls for an atmosphere of mutual trust.</td>
</tr>
<tr>
<td>Magis</td>
<td>That which makes us desire and choose only those things that will lead us more toward the end for which we were created.</td>
</tr>
<tr>
<td>Transformation</td>
<td>Jesuits seek to promote faith that does justice by bringing about a personal transformation of their students so that they may, in turn, transform the world.</td>
</tr>
<tr>
<td>Frontier Living</td>
<td>Jesuits live and work on the frontiers of the world, not only geographic but also social and cultural frontiers. And on these frontiers they encounter the collision between indigenous and foreign cultures. (For adult students returning to school after many years, the “foreign culture” may be the online environment.)</td>
</tr>
</tbody>
</table>

Note. *There are many definitions of these terms. We have provided the definitions that relate most logically to the setting in which we are working.

Why would library faculty not working for a Jesuit institution care about these principles? Why would they care about anything beyond portraying facts to their students? As we began looking for answers to those questions, we found that interestingly, research from the education community seems to confirm a strong correlation between the retention of factual information and the engagement of learners’ emotions. In other words, if you want to teach someone something you will do that most effectively by tying the content of your instruction to the student's emotions and personal experience. When you do that, you have a better chance of facilitating lasting change (Imel, 2003; Shen, Wang, & Shen, 2009; Wosnitza & Volet, 2005). Could it not be argued that what all teachers want is for their students to retain and be moved to action by what they have learned?

Since 1982, Gonzaga has been involved in distance education primarily for its Master’s programs. Foley Center Library has had a distance services librarian on staff since 1988, providing services to distant and online students in the usual ways: toll-free number, online and printable tutorials, interlibrary loan, chat reference and document delivery. The School of Education has site-based cohorts of graduate students in British Columbia and Alberta, Canada who receive a face-to-face library orientation at least once during their two-year program. However efforts to provide adequate library instruction to distant students in the School of Professional Studies needed improvement. In fact, a survey of distant students in 2005 revealed that 10% of the 189 respondents (all from the School of Professional Studies) claimed the survey was the only information they had ever received about the library. They were all enrolled in the same program, so
the department agreed to send the distance librarian a list of new students each semester who then received an email promoting library services. When the programs in Gonzaga’s School of Professional Studies switched to all online courses, those introductory emails were often the only form of library orientation for the majority of students. The Master’s in nursing program recently added an embedded librarian in the research methods course as well. Other online graduate programs include a library orientation during a required on-campus weekend, although for some students the introduction to library resources comes too late to be truly helpful. The one commonality was the use of the Blackboard course management system to deliver courses; therefore, using Blackboard to deliver library instruction looked like the best solution.

Over a number of years, the distance services librarian had actively pursued a significant library presence within Blackboard. The intention was to use it as a supplement to the library webpage, a place where students could find additional research assistance and tutorials to help them use library resources. After creating the Foley Center Library Blackboard site, we requested that all students be automatically “enrolled” so the library would appear as a course on each student’s Blackboard page, but were told that was impossible. Aware that other libraries had already been successful using Blackboard, this was particularly frustrating and with no satisfactory way to promote the “class” it as a voluntary option, the Foley Library Blackboard site was all but forgotten. The distant services librarian was determined to continue the pursuit and announced the library’s intentions to get onto Blackboard whenever possible to whoever would listen. When the School of Professional Studies hired a new Director of Distance Education the plan finally found a valuable and influential ally. In fact, the new director was so enthusiastic about the idea he immediately arranged a meeting with the Chief Information Officer of the Jesuit Distance Education Network (JesuitNET) and we were on our way to delivering library instruction online.

The CADE Process

The online classes in the School of Professional Studies are delivered via JesuitNET Blackboard; this is a separate system from the Blackboard site used by undergraduate classes on campus and for that reason, there were fewer barriers for the library’s proposed “presence”. The expectations, however, were higher. The School of Professional Studies asked the librarians to create a one-credit course on library research skills. Seeing this as an opportunity to teach students everything we wanted them to know about the library we agreed to the project. In order to proceed, we had to complete the Competency Assessment in Distributed Education (CADE) Course Design Workshop required of all course designers for JesuitNET. The six-week workshop is delivered entirely online so the faculty participants can better understand the online student experience. It involves approximately ninety hours of reading, reflecting and writing to produce a 25+ page portfolio containing the completed course design. Feeling this was a task better accomplished with two brains, the distance services librarian and the instruction librarian enrolled as one participant, dividing the both the readings (see Appendix A), the assignments and the time involved to complete the workshop. We also wanted to know exactly what was expected and were permitted to attend one workshop session as occasional observers prior to enrolling in the Spring 2009 workshop.

Before starting the workshop, we met with JesuitNET’s Director of Curriculum Development, who asked us an important question, “How do you want your students to feel about the library?” We were told the answer would become the foundation for our course. This was our introduction to course design in a Jesuit environment. The question was not easy to answer. Yes, librarians want students to like libraries, but creating an overall feeling about the library through the coursework had never occurred to us. We attempted several answers that day, but none were considered satisfactory and we nearly abandoned the project out of frustration. Several more attempts to articulate how we wanted our students to “feel” resulted in the following statement:

It may sound like a lofty goal for such a small course, but we would like our students to be transformed as researchers. We would like them to be bold in the face of their fears and inadequacies surrounding technologies used by libraries and the resources provided by libraries. We would like them to see librarians as gate openers who are willing to address their most difficult concerns. We would like them to think, write and research like people in their profession. We desire that our students identify research needs and assess the best place to fill those
information needs. We want them to seek information in a variety of places and access it with skill. After evaluation of the information they find we hope they will choose those resources that best fill their needs and use that information to accomplish their task at hand (Kappus & Jenks, 2009).

With our statement approved, we went about the business of creating the course content through the CADE workshop assignments. For each module, we had to provide: a name for the module; a description of the content; an explanation of the competencies to be mastered; the expected evidence of mastery; a list of the presentations and readings; discussion questions; assignments and finally, how we would assess the completion of each module. Thinking this intently about library instruction was a stretch for librarians who normally stand in front of a classroom with the hope of embedding a few useful bits of information. Our completed portfolio planned for four modules covering research basics and the use of library resources and services. Table 2 provides the description and contents for each module.

Table 2

*Research Primer Course Modules: Description and Content*

<table>
<thead>
<tr>
<th>Module 1: Basics of Research</th>
<th>Description: Introduce students to the library’s online resources and research terminology.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Content:</strong> Foley Library terminology, video tour of the library, self-paced worksheet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 2: Database Searching / Finding Articles</th>
<th>Description: Students will learn important aspects of doing a literature search: select a database; create a search strategy and refine a search using controlled vocabulary and limiters.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Content:</strong> Database searching tutorials, database searching worksheet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 3: Managing Search Results</th>
<th>Description: Once references have been located, they need to be retrieved and organized. This module introduces students to interlibrary loan, Periodicals @ Foley and RefWorks.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Content:</strong> RefWorks, Interlibrary Loan, Periodicals @ Foley</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 4: Books and other Resources</th>
<th>Description: While online articles are the preferred resources for online students, books also have valuable information. Students will learn how to find and request books using the library’s catalog and the WorldCat database.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Content:</strong> Library Catalog and WorldCat tutorials, guided worksheet.</td>
</tr>
</tbody>
</table>

In incorporating Jesuit principles in the construction of the class we desired to acknowledge the truth that how you teach becomes what you teach and how you teach is who you are. We considered
fidelity to Jesuit standards of integrity, discernment, rigor and access. We accepted that our class was a process and we could revisit it over and over to refine its effectiveness. To begin we chose a process of using discussion questions, specifically reflection questions, asking students how they felt about the work they just completed. This certainly goes beyond normal library instruction coverage and it was possibly the most challenging part of the course design. We wanted to use personal experience and a subjective reflection that acknowledges human excitement, wonder, confusion and even fear within the strength of a community of experienced leaders and fellow learners. Table 3 shows the “Research Reflection” questions asked at the beginning and end of the Research Primer course along with the discussion questions accompanying each module.

Table 3  
*Research Primer Reflection and Discussion Questions*

<table>
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<tbody>
<tr>
<td>- What library resources impressed or surprised you?</td>
<td>- What did this module teach you about doing research?</td>
<td>- Attach your annotated bibliography to a message and include a few comments about your experience using RefWorks. Expressions of frustration are just as welcome as cheers of amazement.</td>
<td>- Did this type of instruction (step-by-step tutorial) work for you?</td>
<td>- Now that you have completed the modules in this &quot;primer&quot;, have your feelings changed about doing research? Do you feel more prepared to do research? Have you surprised yourself?</td>
</tr>
<tr>
<td>- Which resources do you think you might use the most?</td>
<td>- Were you mostly excited and amazed or confused and frustrated?</td>
<td>- Do you think RefWorks will become an essential part of your student experience? Why or why not?</td>
<td>- Please post any questions or comments you have about the topics covered in this module.</td>
<td>- What elements of doing library research will you carry into your life outside of your academic work?</td>
</tr>
<tr>
<td></td>
<td>- Share a success you had with database searching or using ILLiad or Periodicals@Foley.</td>
<td>- Will you use another method or product to keep track of your references? We like to know what else is out there that students find effective or easier.</td>
<td></td>
<td>- What would you tell a new graduate student (or a family member) about library resources?</td>
</tr>
</tbody>
</table>
Implementation

Completing the course portfolio for the CADE workshop took hours of thinking, writing, reflecting, rewriting and discussing. By the time the actual course opened to students in November 2009, however, we had made several modifications to simplify the course. One reason for the changes was a concern about the workload for library faculty when the population of over 1000 online students would eventually be required to take the course. Even with the planned help of an adjunct librarian, it was necessary to reduce the coursework requiring instructor engagement to just one assignment. We felt a final annotated bibliography would be sufficient to demonstrate each student’s ability to use diverse library resources including RefWorks.

Another motive for simplification was to reduce the stress on our mostly adult students. They needed this course primarily as a tool. We decided the reflection/discussion questions were still important to help students make the personal and/or emotional connection with the course, but the primary focus was on the skills they needed to do research. Badke (2008) provides us with additional rationale for these decisions:

“...adult learners, unlike the average undergraduate, actually have lives. They don't have time to master the process, nor will they likely be doing a lot of academic research once their programs are done. Ideally we would turn them into licensed drivers of research strategies, but realistically they just want to cut to the chase, do the work, and graduate. They don't have time for ideals (p. 50).

Throughout the course development phase, we had the full support of the library administration and the School of Professional Studies. The Instructional Technologist at JesuitNET helped us post our modules to the course shell and everything was looking good for an October trial. Then, as the opening date for the class approached, other questions surfaced that involved academic protocol and politics. What was the course number? What department “owned” the course? The School of Professional Studies was planning to include our Research Primer as part of a triad of one-credit preliminary courses that would eventually be required of all online students enrolled in their programs. They had already opened the writing course and the third course was going through the CADE process. Was Research Primer for credit or not? If it was a one-credit course, how much would it cost and who would get the money and more importantly, if it was for credit, who would present the class to the Academic Council for the required approval?

After a series of phone calls and emails from the Dean of Library Services to the Academic Vice President’s Office, the Registrar’s Office and the School of Professional Studies, the Research Primer test class opened (two-weeks late) as a non-credit continuing education course. The future of Research Primer as a required one-credit class depends on several factors, one of which involves adding more assignments to increase the time students spend on the class; this, in turn, means more library faculty hours, which we cannot provide at this point in time. There is a major obstacle for the School of Professional Studies, as well. In order to require students to take the class (and the other two of the triad), each of their three online Master’s programs would have to be reapproved by the Academic Council and that might take an act of God. At the end of the semester, the students who have completed the Research Primer course were positive about the value of the material covered and offered very helpful feedback. Two sections of the course are planned for spring semester with the same continuing education designation. Eventually, we hope to bring in a few more of the elements of Jesuit education from our original portfolio.

Conclusion

The existence of the library’s online Research Primer class could be described as a miracle, (possibly influenced by the spirit of St. Ignatius?). After many years dealing with our demons of rejection and frustration, the seemingly angelic enthusiasm and support from JesuitNET provided the means to achieve our goal of a strong library presence in Blackboard. There were and will be other demons to face (workload, non-credit vs. one-credit, required vs. voluntary, ownership, etc.), but we are confident that we have started an important and necessary new era in library instruction at Gonzaga University.
References


APPENDIX

CADE Reading List


Web Resources

- Foley Center Library: [http://www.foley.gonzaga.edu](http://www.foley.gonzaga.edu)
- Gonzaga University Online: [http://tinyurl.com/GonzagaOnline](http://tinyurl.com/GonzagaOnline)
- Ignatian Pedagogy: [http://www.ajcunet.edu/Distance-Education---Ignatian-Pedagogy](http://www.ajcunet.edu/Distance-Education---Ignatian-Pedagogy)
- JesuitNET: [http://www.ajcunet.edu/Distance-Education](http://www.ajcunet.edu/Distance-Education)
Anything, Anywhere, Anytime: The Promise of the ANImated Tutorial Sharing Project for Online and Mobile Information Literacy  

Carmen Kazakoff-Lane  
Brandon University  

Abstract  
Reaching and teaching users in the diffuse, multi-gadget, online/mobile world is a significant challenge facing libraries. This article will discuss how the ANImated Tutorial Sharing Project (ANTS) production model provides libraries with a sustainable approach to building large numbers of multimedia learning objects that are useful beyond one library. It will also discuss how ANTS File Conversion and Syndication efforts mean that these learning objects (1) can be made highly visible to users accessing content via a computer or smart phone, and (2) enable libraries to establish a meaningful electronic presence for the purpose of providing point-of-need information literacy.

“[L]ibraries must have a ‘bias for action and collaboration’… [and not] turn inward and focus on protecting local resources [as] they could [then] pull back from essential cooperative work” (Association of Research Libraries, 2009, p. 5-6).

“If small libraries are going to survive and thrive in today’s competitive technological environment, it will not be as a thousand small units but as a unified collaborative” (Roberts, 2005, p. 24).

“The speed of digital communication has made it possible to harness the power of volunteer scholarly contributors from around the world” (Maron & Smith, 2008, p. 34).

Regardless of whether you work in a small library or a large library, an academic library or a public library, it has become impossible to ignore the challenges we all face in this 24/7, digital, diffuse, economically challenged world. Library after library is struggling with how to serve people who like the convenience of the Internet and turn to it first for information instead of libraries with accessible, authoritative, digital collections. In The Internet Goes to College it was reported that college students use the Internet prior to going to the library to find information and that 73% use the Internet more than they use the library for their research (Jones, 2002). Similarly, in OCLC’s Students Perceptions of Libraries and Information Sources (2005), 89% of students indicated that they begin their research with an Internet search engine. The data also indicates that it is their preferred destination in the future as 91% indicated they would use a search engine while 66% indicated they would use the library, and 50% indicated they would use a virtual library next time they do a search. The same study also learned that there is a definite lack of awareness about libraries’ virtual presence as 32% of student and 58% of the overall study group were unsure as to whether the library owns electronic journals; and 31% of students and 58% of the total respondents we unsure about whether the library provides access to databases, which in part explains the tendency of people to first turn to search engines and bypass libraries.

Libraries are also struggling with how to provide 24/7 on-demand services at a time when the financial crisis means libraries are losing staff. They are struggling with how to provide multimedia library services in a world where “text is rapidly losing ground to image and video content” (Buczynski, 2009, p. 38). In the Pew Internet and American Life study entitled Online Video (Madden, 2007), it was found that 57% of Internet users watch or download video, and the rate is even higher for 18-29 year olds as 76% reported viewing or downloading video. The report also tied broadband access to higher usage of video, so increases in bandwidth since then likely means even more people are consuming this media. As 57% of viewers also share videos with others, many libraries (1) recognize the importance of video to mainstream...
Internet users, (2) see its potential for serving people, and (3) need to be made aware of the potential value in having users promote their services and resources via the sharing of videos with others.

Libraries are also wrestling with the technological challenges associated with serving users who want to access library services and resources using an increasingly diverse number of devices such cell phones, laptops, and e-book tablets. Due to the expanding capabilities of mobile smart devices, the Association of College and Research Libraries (ACRL) states that there will be an increasing demand for services on these devices by students and that many colleges and universities are already creating courses that will be delivered on cell phones (ACRL, 2009b). Similarly, an increased demand for mobile service is predicted by *The future of the Internet III*, which states that “[t]he mobile device will be the primary connection tool to the Internet for most people in the world in 2020” (Pew Internet & American Life Project, 2008, p. 3).

These challenges are substantial; they are game changing. People’s information seeking behavior has been forever changed and the financial crisis means there will be fewer and fewer resources that libraries can utilize to deal with these issues. Systemic changes that “make radical reinvention imperative” (ACRL, 2009b, p. 3) needs to occur if libraries wish to establish a “meaningful electronic presence” (ACRL, 2009b, p. 9) that gains and holds people’s attention, and if this time we choose to “hunker down, hide out, take refuge in the fox hole, and wait for the storm to pass” (ACRL, 2009b, p. 3) we risk being forever sidelined by an information economy that is speedily progressing and – in some cases - seeking to sideline libraries (ACRL, 2009b, p. 9).

With all of these challenges, it would be folly to not undertake a new model of work based upon shared development of services and resources across institutions. The advent of cloud computing resources means that our users are increasingly “moving away from locally supported services” (ACRL, 2009b, p. 7) and Web 2.0 sites (like RSS feeds and feedback from blogs) means that “there is increased use and expectation of distributed or diffused content” (ACRL, 2009b, p. 8). Moreover, a new model based upon inter-institutional collaboration would enable libraries to bring together much of the expertise being lost within institutions undergoing cutbacks, in order to collectively serve today’s users and thereby reposition libraries in the eyes of those who seek information. In this paper, I intend to demonstrate how the ANimated Tutorial Sharing Project (ANTS) provides a model for such work. In particular I will discuss:

1. How it uses technology, collaboration, licensing, file conversion, and a wide range of incentives, to facilitate in the shared development of large numbers of interactive flash tutorials that work on a wide range of devices, and
2. How it uses syndication and embedding to make this content ubiquitously available so as to increase the visibility of both learning objects and libraries.

I will also discuss how the project provides libraries with a sustainable method of creating and updating these useful open educational resources in good or bad times.

**What is ANTS?**

The ANimated Tutorial Sharing Project (ANTS) is a collaborative project that seeks to build large numbers of library related learning objects and make them highly visible to people who need help looking for information. The project began in 2006 as a Council of Prairie and Pacific University Libraries (COPPUL) initiative which sought to:

- “Create a critical mass of Open Source Tutorials for online resources used by libraries everywhere” (ANmited Tutorial Sharing Project, 2009a).
- Rationalized the development of learning objects and thereby “eliminate duplication of effort across institutions” (ANmited Tutorial Sharing Project, 2009a).

These objectives drove how the project was initially laid out and they remain as a core part of the ANTS project. However, initial assessments of how the project was working, new ideas brought forth by
new team members, feedback from librarians outside of the project, opportunities to do more with new sites, and strategic planning sessions within the project, have resulted in additional goals and objectives being established to facilitate in the continued growth of ANTS. These goals and objectives include:

- Use of syndication and embedding technology to make library related learning objects ubiquitously available to online learners and thereby enhance librarians’ ability to reach out and educate users wherever they are online.
- Provide library screencasters with guidance so as to build up the number of potential contributors to the project.
- Expand the types of tutorials to include non-database tutorials.
- Ensure that content could be viewed on smart phones that support flash files.

Collectively, these goals and objectives provide librarians with a clear understanding of the project’s aspirations and work to generate interest in collaborative work. They also (1) provide the ANTS Team with direction and guidance when assessing what infrastructure and services to support or develop and (2) guided the evolution of the project to its current conception: a site that serves as a central home for library screencasters who come to it to both upload and download files, access embedding code, get up-to-date information about work occurring in other institutions, and acquire assistance with screencasting from the ANTS Team and fellow screencasters.

How ANTS Works

Facilitating coordinated development of Learning Objects across institutions may not be easy, but advances in Collaborative Information Technologies (e.g. Wikis, RSS feeds), open source systems (DSpace), Creative Commons Licensing, and file conversions (for operation on a wider range of devices) means that it is feasible. These advances provide sharing projects with much of the infrastructure required to initiate such a project and therefore serve as an excellent start. However, shared development of learning objects requires more than infrastructure. In order for shared development to actually work, projects need to also focus on (1) creating open educational resources that are useful beyond one institution, and (2) a model of content creation that is affordable so as to ensure continuous development and updating of educational resources. In the case of ANTS, all of these requirements have been taken into account through our use of (1) technology; (2) guidelines for content development; and (3) a co-producer model of content creation that seeks to (a) incentivize voluntary contributions from a wide range of librarians and (b) provide these contributors with free access to the communication and file storage infrastructure they need in order to participate.

Contributors who are new to the project initially visit our wiki’s How to Contribute page where they consult our list of Tutorials Identified for Development, select one, and then indicate that they are working on it by posting their name and contact information beside the tutorial. As they do so they can (1) select from a host of electronic resources widely used in most libraries, (2) select from a number of information literacy tutorials, or (3) utilize the dynamic nature of the wiki to post that they are working on something not previously added to the list. By using the wiki to indicate what they are working on, they inform other librarians in other institutions that production of a tutorial is underway and thereby eliminate duplication of effort.

The next step for any contributor working on an e-resource tutorial is to review our Guidelines for Tutorial Development. These guidelines are focused on ensuring that database tutorials are authoritative, modular, well sequenced, adaptable, and generic enough to be used in any library as created. The guidelines also serve to make adaptation easier for those who wish to customize a tutorial by asking contributors to use standardized fonts, colors, etc. In either case, the ANTS guidelines work to ensure that librarians in different institutions work on content that is both easy to use and useful.

After adopting and developing a tutorial, the next step for any contributor is to share their final creation by uploading their files into the ANTS repository, DSpace, where any librarian can get an account in this open source product. Those who are new to the project can also view one of three tutorials indicating
(1) the appropriate Camtasia, Captivate, or Viewletbuilder and SWF files for uploading, (2) the need to include appropriate metadata and (3) the requirement that they sign a Creative Commons Non-Commercial, Attribution, Share-Alike 3.0 License. The Creative Commons License forbids the commercial use of their learning object and grants others the right to view, download, or repurpose the content provided that proper Attribution is given when doing so. This works to eliminate any doubt as to users’ rights and enables multiple libraries to share content without worrying about contacting the creator(s).

Upon uploading the files, metadata, and then signing the Creative Commons License, the contributor’s role is almost complete. From here, the tutorial is quickly reviewed, and the contributor is notified if their files have been accepted, as DSpace sends out notices along with a link to the full record of the accepted content. Contributors whose files are accepted then go back to the ANTS wiki, indicate that they have completed their tutorial, and provide a link to the full record at DSpace so people visiting the wiki know (1) the tutorial has been completed and (2) where to get the source code (for editing) or SWF file (for viewing or downloading.). If any other librarian has registered for notifications from either DSpace – or the wiki – they are immediately notified of new content so instant communication between developer and contributor is possible among colleagues in different institutions.

Up until now, many of the processes discussed in ANTS resemble processes used in other library sharing projects that primarily function by (1) encouraging contributions and (2) housing files on behalf of the contributor. This is what occurs with two other projects: Academic Libraries in Public Service (ALPS) and the Cooperative Library Instruction Project (CLIP); whereas CORIL and ACRL’s PRIMO also provide peer review as an incentive to contribute content to their site. However, ANTS’ focus on providing librarians with access to current (i.e. useful) learning objects, combined with (1) the feedback it received about the project, and (2) its interest in supporting new and emerging video technologies, led us to reject peer review as our means of encouraging contributions from voluntary contributors and instead focus on (1) what was done with the files once they were submitted, and (2) services and advice that help new and existing screencasters.

One thing that ANTS does with submitted files is migrate them to two cloud sites with advanced sharing features. The first site is Screencast.com, which provides us with (1) a home to house interactive SWF files, (2) embedding code for these SWF files, (3) excellent resolution so viewers can easily read what is typed into a database search box, (4) the ability to upload all information about the tutorial derived from the metadata at DSpace, and (5) the ability to subscribe to this site via RSS, iTunes or 1 Click, so as to be immediately notified of new content. As Screencast.com is one of the few sites that not only allows but welcomes interactive SWF files, it is important to anyone who wishes to create a tutorial with built in quizzes or other forms of interaction. Its embedding code means that people who want to use this content can easily stream interactive tutorials to many sites in a highly visible fashion.

The second site that ANTS migrates content to is the Library Information literacy Online Network, or LION TV, at BLIP.TV. BLIP.TV does not accept interactive SWF files, but it does provide the project with the ability to do many exciting things with digital video files due to its excellent sharing, syndication and file conversion features; features which help to ensure that (1) librarian created content can be made highly visible to people on the Internet, and (2) viewers can access digital video files from a computer or a smart phone.

Content found at the LION TV site is presently made available as FLV, MP4 and M4V files. Like Screencast.com, content at LION TV is derived from files taken from DSpace, but in this instance the ANTS team first converts the SWF to an MP4 files and then prepares to upload that file to LION TV, together with all relevant information associated with the tutorial. In particular, the project:

1. Consults the Metadata at DSpace and includes this information in:
   a. A description of the tutorial that includes the author, title, what e-product it is for, viewing time, when it was created, and what software was used to create it.
   b. A tag field where relevant subjects and titles are entered in order to make the learning object is more discoverable and better ranked when the site is indexed by search engines.
2. Takes advantage of BLIP.TV’s license options and indicates that the contributor has signed a Creative Commons, Non-Commercial, Attribution, Share-Alike 3.0 License.

Once all of this information and files is entered, BLIP.TV is told to upload all content to LION TV.

Upon uploading, BLIP.TV provides the ANTS project with a lot of behind-the-scenes magic. Like Screencast.com, people can view uploaded content at a site with excellent screen resolution and subscribe to LION TV’s content using RSS, iTunes, Miro and Channels.com. Similarly, they can also access embedding code to make screencasts highly visible from a wide range of sites. But here the similarities end as BLIP.TV also:

- Provides a wider array of sharing options for each screencast - including the ability to share at sites like Facebook, Del.icio.us, etc.
- Converts the MP4 file to (1) an FLV file for playing on LION TV’s Main and Episodes pages, and (2) M4V files which can be viewed on handheld devices.
- Syndicates all content - and the video’s description - to a wide variety of popular brand sites on the Internet such as Facebook, the Internet Archive, recently YouTube®, and soon, Vimeo.
- Ensures that aggregators (iTunes, BlinkX, Yahoo Video, AOL Video and MeMedia) can immediately identify relevant ANTS videos / video descriptions and depending on the search engine place them at – or near - the top of their relevancy ranking so users find it easier to locate appropriate content.
- Provides viewers with links to all relevant files, the Creative Commons License, multiple sharing options, and the ability to provide feedback about each episode.

It is hard to state just how important these sharing, syndication, and file conversion features are to a library world that is looking to have its educational videos made visible to online users who are accessing content from computers and handheld devices. Because of ANTS’ embedding and sharing features, librarians can identify where their users are likely to need access to a tutorial and embed ANTS content into LibGuides, course management sites, blogs, and Facebook sites. Similarly, librarians know that (1) as ANTS content is more discoverable via video search engines and (2) ANTS collaborative efforts mean more relevant content is being created that (3) there is a greater likelihood of people accessing useful, authoritative, multi-device, educational videos at their actual point of need.

Aside from the interest our file conversion and syndication efforts have generated, the ANTS team has done one additional thing to generate good will among the library community: provide assistance to library screencasters. This aid can be found at our ANTS wiki, where we have (1) a Best Practices in Screencasting section with advice on how to create effective tutorials, embed or stream videos, add surveys or Google Analytics to screencasts to measure effectiveness, etc. (2) a discussion forum where people can ask for assistance from fellow screencasters, and (3) contact information for the ANTS team. As participants can also create a profile on the wiki, these initiatives are contributing to the growth of a library screencasting community which shares knowledge, learns from the work done by others, and is generating growing awareness of the value of virtual teamwork in collectively servicing the information needs of all of our users. Much as the ANTS team has benefited from the knowledge of our colleagues in different institutions, we hope that this community will also generate synergy and come to see value in newer ways of working.

ANTS and OERS

Providing the infrastructure to facilitate shared development of learning objects is an important element of any sharing project, but more is required to make a sharing project work. Another element of importance is to focus on the creation of learning objects that are useful beyond one institution and ANTS has, from its inception, looked to the open educational resources (OER) world for ideas and specifications that assist with this.

Very briefly, open educational resources are learning objects that can be easily used and repurposed so as to (1) enable the educational community to share in the development of large number of
useful learning objects, and (2) distribute these learning objects without restrictions on usage (much like is
done in open access journals). Stephen Downes (2007) provides an in-depth assessment of what is an open
educational resource where he stipulates that OER projects need to address technical, licensing, funding,
and content requirements in order to be affordable projects (so OERs can be kept current) and useful
projects (i.e. produce content that can be easily used and adapted by multiple institutions) (p. 31-32). More
specifically, in order for a learning object to work as an OER, Downes states that it must be authoritative,
modular, adaptable, interoperable, easy to use, discoverable, accessible, convenient, affordable, and
available to anyone who wants to use it for free (p. 36).

From its inception, ANTS has differentiated itself from other library sharing communities by
focusing on these issues and has done so by:

1. Emphasizing collaborative development of authoritative content by librarians.
2. Emphasizing the need to develop current/useful learning objects via our Adopt a Tutorial
   approach (wherein creators volunteer to keep their learning object current); and by proving easy
   access to learning objects that were not subjected to time-consuming peer review.
3. Emphasizing the creation of content that is well sequenced, modular, and capable of being used as
   is [i.e. easy to use/useful] via our Guidelines.
4. Ensuring that all content can be adapted [i.e repurposed] by any library wishing to do so via free
   and easy [i.e. accessible, convenient] access to our source code in ANTS central repository
   [DSpace ]; and by the technical requirements in our Guidelines related to adaptability.
5. Ensuring licensing issues [e.g. availability for use and the right to adapt] were addressed via our
   Creative Commons License.
6. Focusing on discoverability by:
   a. Ensuring relevant metadata was always entered at DSpace;
   b. Linking to the content at DSpace from our wiki workspace; and
   c. Utilizing syndication and sharing technology [i.e. LION TV] to enhance the
      discoverability of librarian created content via video search engines, popular brand sites,
      and by enabling librarians to embed content where their local users will see it.

Collectively, these decisions are important to the creation of OERs and as such:

If one looks at the parameters laid out for usefulness by the OER community; and then looks at
ANTS licensing, guidelines, content, various sites, and its use of syndication technology; one can
see that ANTS Tutorials are authoritative, modular, adaptable, interoperable, easy to use,
discernable, accessible [from three sites], convenient, and freely available for anyone who wants
to use them (Kazakoff-Lane & Betty, 2009).

This, in turn, leaves the issue of affordability to be addressed. As affordability is the third key issue
related to inter-institutional collaborative development of useful flash tutorials, it is an issue that needs be
addressed on its own. Consequently, in the following section we will look into how ANTS is encouraging
librarians to take note of its content and services, and how this is encouraging them to work as volunteer
contributors in its project.

ANTS and Affordability: The Importance of Non-Monetary Incentives

[One of the key issues related to sustaining open educational resources is] “finding and utilizing
non-monetary incentives to engage as many participants as possible” (Hylen, 2007, p. 97).

[It behooves the OEP’s [open educational program’s] organizers to consider and focus on the issue
of increasing the aggregate value of the site to its constituents to the greatest extent
possible...[U]less the OEP site is able to first gain and maintain a critical mass of active, engaged
users, and provide substantial and differentiated value to them in its start-up and growth phases,
then none of the available and/or chosen revenue models [for creating OERs] will be likely to work
for the OEP in the long run. The first step for an OEP is to gain a deep understanding of who its
site’s user are (and should be) and what constitutes value for them. (Dholakia, King, & Baraniuk,
Given that OER projects have to deal with the issue of how to find resources to fund ongoing development of learning objects, it should come as no surprise to learn that the literature is littered with discussions about how to derive ongoing funding for OER projects. Different projects take different approaches such as grant seeking, asking for participating organizations to pay annual fees, acquiring institutional funding, or using volunteer contributors. Such discussions usually delve into the advantages and disadvantages of each of the aforementioned approaches, revolving largely around the benefits of centralized versus decentralized control of content development. For example, major grants enable institutions to centralize production and hire professional developers who create quality learning objects identified by the organization that received the grant, but they often find that they cannot continue updating their learning objects if the funding ends. On the other hand volunteer projects, which hold out the potential of being more likely to survive through good times and bad, tend to be decentralized and cannot command people to create specific objects but instead take what they can and rely on the good will of their community of contributors.

As ANTS was originally conceived as an unfunded consortia project wherein COPPUL librarians would collaboratively identify content for development and updating, the project committed itself to the volunteer [i.e. co-producer] OEP model. While this co-producer model of content development, combined with affordable sites, ensured that the project was not in need of a lot of funding [i.e. it was affordable], it also meant that in order for the project to be successful it needed to find ways to attract large numbers of volunteers to build vast numbers of OERs. One way that ANTS sought to build up large numbers of volunteers was by getting permission to open the project beyond COPPUL and take advantage of the large numbers of potential contributors in the library field. The other way the project sought to attract volunteers was by creating a number of non-monetary incentives that were not dependent upon the slow process of peer review [i.e. a process whereby the time a Learning Object was reviewed, it was redundant due to the tendency of vendors to change interfaces on a frequent basis]. ANTS assessment of what fellow librarians [i.e. potential contributors] would value was based upon early decisions about how ANTS would operate, the feedback we received from fellow professionals, and our own assessment of the importance of new developments in the fields of information, technology and user behavior. Ultimately, it has resulted in ANTS becoming a multi-purpose site that provides library screencasters with a multitude of incentives. Individuals who come to the project may see value in one of these incentives, or look at the project as a whole and assess its merits based upon its overall approach to collaborative tutorial development. In either case, the project offers screencasters:

1. **Clear, positive goals** that tell people what the project is about and around which ANTS makes decisions about strategic initiatives with a view towards what would benefit the library community as a whole. The literature on OERs points to the importance of having strategic goals that people value (Hylen, 2007; Downes, 2007) and numerous posting on different library blogs which cite ANTS goals means that our goals are very well known.

2. **Useful content which benefits their libraries.** In particular, it answers a clear need for content by librarians who recognize that multimedia is quickly replacing text as the educational medium of choice. These people know that (1) it is important to have this content at their sites, (2) in order for the content to be useful it needs to have a clear information literacy focus to it (unlike much vendor content), (3) creating and updating this content is too big a task for any one library to undertake on its own, and (4) via ANTS, their users can have 24/7 access to broad range of authoritative, useful, and current OERs that work on multiple devices. As such, ANTS’ collaborative approach to developing generic content encourages people to think about contributing to the project since they know it is the most feasible way of providing their own users with enough useful educational videos.

3. **Visibility.** Aside from providing library users with access to useful screencasts, contributors to ANTS value its work in making librarian created content ubiquitously available via syndication and enhanced discoverability - as such work addresses an ongoing concern about the visibility of libraries in the online/mobile world. The value that librarians place on syndication is demonstrable;
ANTS has seen a significant rise in the number of downloads and views at DSpace since announcing its foray into syndication in May of 2008 (ANimated Tutorial Sharing Project, 2009c). Consequently, it is an important incentive for those who want to ensure that people can easily identify useful library screencasts, regardless of where they are online.

4. **Affordability.** Unlike some OER projects which may seek annual fees for participation, ANTS use of (1) volunteers (co-producers), and (2) affordable sites means that the project offers the online community free access to all of our content, and that the only cost for librarians participating in the project is the cost of screencasting software. These minimal costs are affordable to anyone who wants to add content to this site, and hence it removes an important barrier to participation. ANTS is not alone in believing this is important for OER projects. Dholakia, King, and Baraniuk state that “collaboration should be easier, not harder” (2006, May, p. 4) in order to create the necessary conditions for widespread use and reuse of OERs.

5. **Personal recognition.** Recognition is probably one of the most important motivators for people who deal in ideas. This has proven to be true for academics who like to measure the impact of their publications and it is equally important in the world of OER development. (Dholakia, King & Baraniuk, 2006, May; Downes, 2007). As this is the case, successful OER projects need to do two things well: (1) ensure that all contributors are given the proper attribution for their work, and (2) ensure that there is a means for measuring impact.

While many OER projects address recognition by ensuring that each learning object is properly attributed via the metadata associated with it, ANTS use of syndication technology to distribute both content and a description of the learning object ensures that the developer’s name is always associated with the learning object regardless of whether the tutorial is discovered at LION TV, YouTube, the Internet Archive, Facebook, or a video search engine. Being able to link content to authors is a critical element of any OER project that seeks to distribute content as widely as ANTS does, as it enables us to live up to the attribution section of the contributor’s Creative Commons License, and thereby incent participation among those who want credit for their work.

As regards the second element of recognition – impact - contributors to ANTS are given access to both viewing and download data via DSpace, and they can request viewing data from LION TV and Screencast.com. The download data is particularly important for a project that does not provide peer review, as having fellow librarians and educators download your learning object is a user-driven quality assurance measure. Another such measure is post-publication review which enables users with different focuses the opportunity to give feedback. Post-publication review is also possible via the feedback section at LION TV (although it has yet to be used) and it is a quality assurance Measure that is used in other OER projects, such as Connexions (Hylen, 2007).

In either case, the ability to both syndicate names and measure impact make ANTS a project that effectively addresses one of the most important incentives for voluntary contributors: recognition. Although it has yet to be measured, we also suspect that much like open access publications, OERs will be demonstrated to have a much greater impact than commercial learning objects and that this in turn will further encourage people to make their learning objects openly available.

6. **Modularized content development.** ANTS’ emphasis, via its Guidelines, on creating short, well sequenced tutorials that are deemed to be more viewable means contributors to ANTS are not asked to develop extensive information literacy tutorials, but instead shorter, more manageable modules. This emphasis on modularity means volunteers are better able to contribute time to the project and it has been identified as an important means of generating volunteer contributors in the open source community as well (Hylen, 2007).

7. **Altruism.** Another important motivator driving many who contribute to open source and OER communities is altruism (Downes, 2007). This motivator is likely even stronger in librarians as (1) the profession is one which is dedicated to helping others, (2) librarians already have a history of inter-institutional collaborations in areas like inter-library loans, consortial purchasing of electronic
resources, and shared development of cataloging records, and (3) avid endorsers of the open access movement, the profession has a history of seeking to liberate and share knowledge.

Having said all this, it is important to note that the will to do good always needs to be matched by the ability to do good, and in the case of ANTS that means ensuring that cost of participation is low in terms of monetary costs, infrastructure and time. The issue of monetary costs has already been addressed in the section on affordability, and the issue of time in the section on modularity. What should be elaborated on further is the importance of cloud sites to the technological and infrastructure costs of participation. These sites make it possible for librarians to share multimedia files with others outside of their library without placing undo strain upon their institution’s servers and bandwidth. ANTS therefore makes it easy for altruistic people to participate in its project and it reassures them that their content will always be used to benefit others, as the Creative Commons License ensures this.

8. **A library screencasting community** where novices can get assistance and experienced screencasters have the opportunity to share their knowledge. Currently, this community is structured around our wiki where people can (1) visit our Best Practices in Screencasting site, which has advice from ANTS team members, (2) post questions on our discussion forum, (3) consult our FAQ section for answers to common questions, (4) create personal profiles and add friends to their profiles, and (5) find contact information for the ANTS team and fellow wiki participants. Postings on blogs (Ecclestone, 2009) and ANTS listing in screencasting guides (Metzer, 2009), indicates that many people value our Best Practices in Screencasting section. Similarly, posting on our Discussion Forum also point out that people use our help.

This asynchronous community was initially created in order to build up a knowledge of screencasting among librarians, and to thereby increase the number of potential contributors to the project. But research into the open source movement indicates that developing a sense of community has an additional value: it incentivizes volunteers to work for the greater good of a community with common goals. This was made evident in a study by Bagozzi and Dholakia (2006) in which they examined the importance of LINUX’s User Groups (LUGs). They discovered that LUGs were important in creating a social identity among LINUX developers, and that the longer one was part of the group the greater was their collective commitment [i.e. the We intention] to act as a whole to achieve the collective goal. They also discovered that while asynchronous groups had some advantages, the route to achieving a cohesive group sense likely lies in either synchronous or face to face contact, pointing out the need to more fully integrate either/both into the ANTS project. Face to face contact has been partially accomplished through frequent talks at various conferences, but a more consistent local group activity would be optimal. Consequently, ANTS began seeking out regional representatives to act as local contacts and promoters and we recently brought in the first one in Ontario. ANTS is also is looking at potentially acquiring grants dedicated to initiating these local groups.

9. **Sharing services.** Participants in ANTS can look forward to a host of additional services related to sharing content. They include (1) embedding codes for contributors SWF and digital video files, (2) the ability to use sharing features that incorporate content into sites like Facebook, and (3) the ability to stream all LION TV content. Many libraries are already taking advantages of these services by doing things like embedding ANTS content into LibGuides® or blogs. Others are using ANTS streaming technology to get content into course sites, as streamed videos do not have to be uploaded into course management systems where they may encounter restrictions on file sizes.

10. **Central home for storing and accessing library screencasting files** via DSpace and LION TV. ANTS’ ability to do so is made possible by its use of (1) an affordable video hosting site (BLIP.TV) and (2) an Open Source Repository where any librarian can get an account to upload content. As such this project enables all librarians to come together and house screencasts in one location where it is easy to locate content, instead of many that make it difficult to locate appropriate content.

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11. **Archiving of files.** One last service that ANTS provides volunteers is the ability to archive their content at many sites. DSpace and Screencast.com ensure that SWF files are archived at two sites, and LION TV’s syndication of content to places like the Internet Archive, and now YouTube, means Flash Movie files (FLV) are at multiple sites as well. As ANTS has multiple sites that serve as backup, it means it has an archival mechanism similar [although by no means equal] to LOCKSS.

It is interesting to note that the incentives offered by ANTS correlate with many important measures of purposive value identified as being a key driver of participation in a large networked virtual community (Dholakia, Bagozzi, & Pearo, 2004) as the ANTS project enables library screencasters to get information, learn how to do things, provide others with information, contribute to a pool of information, get ideas (from watching what other screencasters have done), get others to do something for them (as all use resources created by others), solve problems, and make decisions (for example, which screencasting software to use).

One reason why so much of what ANTS offers to volunteers matches so many of purposive drivers is the multifunctional “hub” approach that the project has adopted. Maron and Smith (2008) mention that hub sites are becoming very popular with academics, and Jessica Pryde (2009) indicates ANTS’ hub approach “is a step in the right direction of where a universal initiative could go were it to have more channels of thought and production” (p. 5). In particular, Pryde envisions a “universal overarching initiative systems…[that would enable libraries to] produce and present materials to be placed in this [centralized] initiative…. [A system that would] utilize open source technology …[would be the work of volunteers and institutions taking part in producing the materials… that would work for new entries and submissions [i.e. encourage contributions]...[and have] a simple system determining the type of material, audience, and age level for general categorization… [It would also include] instructional materials on instructional materials [such as] written and screencast tutorial[s] on how to plan, develop and produce materials that might be placed into the initiative…[Such a system would also provide libraries] with the means of not only acquiring materials for their libraries use, but of making their own to share with others (if indeed they do not have that capacity already filled)... [Finally, in this system there would be the] possibility for …a collaborating and reviewing community” (p. 6-8). In other words, the author is advocating ANTS on a larger scale; a centralized international system for all kinds of library content (screencasts, PDFs, Powerpoint, etc) built around open source, shared development by volunteers, categorization and evaluation of OERS - as well as information about how to create such resources and the tools to do so. In short, the author believes there is a definite need for a centralized hub where librarians can collaborate upon as well as access and share a wide range of content or advice. ANTS was initially asked if it would allow people to include other types of materials [i.e. be a multifunctional hub], but ultimately decided not to follow this path as it was felt that it would divert attention away from how to best support multimedia files. However, it does believe that having one site for multimedia content would rationalize development, make it easier to locate appropriate files, and ensure that such files are made visible.

ANTS has believed in taking a “one-stop shopping” approach from the earliest stages in the project when its founding members identified a need for libraries to have one site where they could easily access multimedia files. This philosophy eventually made its way into other incentives identified as important by both newer and older team members who constantly asked what should be done to attract contributors.

It is also interesting to note that the non-monetary approach that ANTS uses to attract volunteer contributors is presently enabling many scholarly projects – such as eBird, the Stanford Encyclopedia of Philosophy, PlanetMath, and Protein Data Bank - to amass information and data (Maron & Smith, 2008). The number of such projects is growing as researchers are increasingly recognizing the value of contributing to aggregate sites - as these sites provide them with access to a comprehensive, and current, listing of data or knowledge.
The Promise of ANTS

Ultimately, OER literature (which identifies key motivators for volunteers), ongoing developments in the world of digital scholarly communication and the open source community (which points to the feasibility of non-monetary methods of attracting volunteers), and the opportunities that are currently afforded to participants in the ANTS project, all point towards the viability of new paradigm of work that if, widely adopted, could enable stressed libraries to sustainably develop large numbers of affordable, authoritative, useful, multi-device, multimedia learning objects and make them available at their point-of-need (be they Internet brand sites, video search engines, local course sites, and LibGuides). This model of work would enable libraries to increase the visibility of both learning objects - and libraries - in the online/mobile world.

This does not mean that there are not hurdles to overcome. There are a number of factors that would facilitate the move towards shared development of large number of multimedia OERs. In particular there is a need for:

- **Institutional incentives that encourage participation in OER initiatives such as aligning tenure and promotion to newer modes of scholarly communication** (Hylen, 2007). This is a long-term objective which is dependent upon what occurs in each institution of higher education. However, newer models of scholarly communication will likely result in institutions looking at the methods they use to assess the scholarship that is occurring in the digital world.

- **Increasing librarians’ commitment to share their learning objects openly; much as faculty shares their publications via open access.** This is in part an educational issue as many librarians who support open access are unaware of (1) the movement to make educational resources open as well and (2) the licensing and technological/design parameters that make learning objects useful beyond one institution. Increasing this awareness would assist in the move towards shared development of learning objects, as the commitment to make publicly funded educational content openly available is a commitment shared by many in the field of Library Science.

- **Alleviating fears about copyright as it relates to screencaptures of database search engines.** Many librarians tell us they fear creating database tutorials out of fears that it might violate license agreements with aggregators or publishers. While we at ANTS are not able to review each agreement with each vendor, we do feel that the educational purposes to which such a tutorial would be used and the fact that the capture represents a small fraction of a set of results from a specific search at specific period of time (and not the revelation of all data within a database/e-journal site) means that the creator is likely well covered by fair use.

- **Continued focus on technology and future directions, particularly in such a dynamic world where opportunities and threats can arise overnight.**

- **Continued development of a library screencaster culture where librarians – across institutions – recognize the value of collaborative work to achieving common goals**

Having said all of this, the ANTS Project Model (Collaboration + Motivation + Infrastructure = Sustainable Development of Large Numbers of OER’s + Increased Visibility for Libraries) provides libraries with a holistic approach to sustainable development of large numbers of useful OERs that can function in good times or bad. It is a model that enables libraries to meet the information literacy needs and preferences of today’s information consumers wherever they are online and however they chose to access our content. Anything, Anytime, Anywhere, is the promise of ANTS. With an equal commitment from fellow professionals willing to work together across institutions, libraries have a real opportunity to build an online presence that diffuses instruction and engages online users.
References


Footnotes

1 As of this writing, the project has seen 100 screencasts submitted to its main repository in DSpace. For a complete listing of projects see ANimated Tutorial Sharing Project (2009b).

2 To see the different types of tutorials ANTS encourage see ANimated Tutorial Sharing Project, (2008, November).

3 The use of an Open Source Repository has been very beneficial to the project as it meant there would be no licensing restrictions on who could participate in this project by software vendors. This meant that ANTS was able to open up access to this repository to any librarian, a limitation that keeps projects like ALPS from growing beyond specific institutions.

4 Note: Advances in the screencasting software that has taken place over the years, means that contributors often voluntarily add AVI, FLV, or MPEG files which were not specified in our guidelines as well as SWF and source code.

5 Note: In early 2007 the project looked at the possibility of using YouTube to house our tutorials but its (1) inability to house SWF files and (2) poor screen resolution, meant we eventually went with Screencast.com and LION TV. More recently, YouTube has begun accepting MPEG 4 Files and High Definition Files, and as a result it is now possible to read text typed into a text box – something that was impossible before. With BLIP.TV’s recent introduction of syndication of content to YouTube, and YouTube’s improved resolution, ANTS felt the time was right to begin sending content to YouTube.

Study Abroad Programs as Information Producers: An Expanding Role for Support of Our Students Studying Abroad

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Abstract
Though increasing numbers of students spend time studying abroad, there has been little discussion regarding the needs of study-abroad students as a distinct user group. The little research that has been done in this area focuses on support for study-abroad students as information users. This discussion expands the conversation to consider our role in supporting study-abroad students as producers of valuable information, particularly as study-abroad programs expand to non-traditional locations and focus on project-based and service learning activities of direct benefit to their host communities. A model for creating digital libraries that supports the work of study-abroad programs in Monteverde, Costa Rica, is presented. Through multi-institutional collaboration, use of graduate student interns, and digital library technology, information produced by study-abroad programs of relevance to both local communities and future researchers is now accessible. Options for wider future support for study-abroad students as information producers are considered.

Introduction
As colleges and universities place increased emphasis on internationalization efforts and productive global citizenship, numbers of American students studying abroad have been steadily and rapidly increasing (IIE Network, 2009). Although there is preliminary evidence that this trend has recently been negatively impacted by the global economic crisis (Forum on Education Abroad, 2009), study-abroad student numbers remain significantly higher than they were even just a few years ago, and efforts continue to increase these numbers into the future. In light of this, consideration of the ways in which academic libraries support our students studying abroad is warranted. Yet, to date there has been a paucity of literature focusing on study-abroad students as a user group with distinctive needs and issues. Only recently, two empirically based studies regarding study-abroad student library use have been published. One study focuses on how ARL libraries are supporting their study-abroad students as library users (Lindell, 2008); the other study focuses on study-abroad student perceptions of engagement with their home institution libraries from abroad (Kutner, 2009). Both these studies consider resources and services available to study-abroad students as information users.

The purpose of this presentation is to expand discussion of the array of ways in which we can better support our study-abroad students to include consideration of study-abroad programs as information producers. Study-abroad students are increasingly involved in project-based learning and service learning activities and engage in work that has a direct impact on their host communities (Edwards, Hoffa, and Kanach, 2005). At the same time, study-abroad programs are expanding their reaches to non-traditional locations, increasingly in the Global South. In these regards, it becomes important to consider how to best support study-abroad students not only as information users, but also as producers of valuable information that has the potential to positively impact local communities. With expertise in information organization and information access, librarians possess the skills to offer another level of support to the study-abroad experience. Through expanding traditional collaborative relationships, the possibility exists for librarians to
work alongside study-abroad programs to ensure that valuable work done within host communities is left accessible to the local community as well as to future students and scholars.

This presentation focuses on one such effort in which librarians and library and information science (LIS) graduate students worked together to create digital libraries of resources produced by two study-abroad programs in Monteverde, Costa Rica. The work for these projects was done on site in Costa Rica in the summers of 2008 and 2009. Through a unique collaborative arrangement with three American universities and the Monteverde Institute, digital libraries were created that contain materials produced by two study-abroad programs, Sustainable Futures and Globalization and Community Health.

**Literature Review**

There are a few themes in the literature that warrant a short discussion to provide some overarching context for the projects described below. The literature examined focuses on creation and use of digital libraries in developing countries, as well as the larger information access and dissemination issues from a developing country perspective. Throughout this discussion, both the terms “developing countries” and “Global South” are used to refer to the more impoverished countries of the world, generally in Africa, Asia, and Latin America. While the term “Global South” is currently the term of choice used by development professionals, the term “developing countries” is still widely used in the literature. The issues raised in these bodies of literature all have bearing on the relevance, meaning, and challenges presented by the two study-abroad program digital library projects.

Witten, Loots, Trujillo, and Bainbridge (2002) outline the potential of digital libraries in developing countries for distributing information that can directly affect the well-being of local communities, as well as the importance of building locally-based information resources. Anuradha highlights the importance of institutional repositories in developing countries that contribute to equal access to the “global knowledge pool”, and are important collections that house retrospective scholarly work as well as present and future scholarly contributions (2005, 169). According to Park, digital libraries “respond to a variety of unmet needs of scientific communities, research institutions, and development practitioners in these communities”, and provide access to bodies of research-based information that are often not accessible elsewhere (Park, Roman, Lee, & Chung 2008, p. 196).

Using India as context, Bhattacharya (2004) recognizes the importance of digital libraries in the developing country context, but the inherent challenges in their creation, including, but not limited to: intellectual property rights, lack of expertise, inadequate finance and infrastructure, and bandwidth problems. Using Pakistan as a frame of reference, Mahmood, Khan and Siddique (2008) focus on the importance of volunteer groups of young professionals to assist in planning and implementation of information and communications technology (ICT)-based library projects in developing countries.

A recently published special section of *Biotropica* -- a journal that focuses on the ecology, conservation, and management of tropical ecosystems -- was dedicated to “sharing ecological knowledge: conquering the research-implementation gap,” and raises many pertinent and important issues regarding information dissemination challenges between the scientific community and the local public (Ghazoul, 2009). Shanley and Lopez conducted an empirical research study that demonstrated the low percentage of

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1. The work presented here would not have been possible without the hard work, diligence, and great attitudes of the following individuals: Marlene Leiton Campbell, Monteverde Institute Library; Cindy Dykes, Syracuse University School of Information Studies; Michelle M.H. Hennessy, Syracuse University School of Information Studies; Stefanie Havelka, Syracuse University School of Information Studies.

2. These digital library collections are available as links from the Monteverde Institute library web site at: http://www.mvinstitute.org/library.html
respondents that actively share their research results with local people who have the most to benefit from them. Because of incentives for scientists to publish in peer-review journals to assure job success, few scientists invest in information dissemination and training activities with local communities, though they recognize that these activities would “likely lead to success in conservation and development” (2009, p. 535). The article suggests that scientists and students use technology and other innovative means to communicate and share results with local stakeholders. In the same issue of the journal, Kainer et al. (2009) discuss advantages to partnering with local stakeholders and utilizing local research centers to aid in this activity. Duchelle et al. (2009) focuses on graduate students as a group of researchers who are becoming adept at building information sharing into their research, which prepares them to carry a more collaborative approach to information sharing throughout their careers.

**Background**

From January – June 2007, the author conducted a sabbatical research project in Monteverde, Costa Rica, and at that time became affiliated with the Monteverde Institute. The initial purpose of the research was to develop a greater understanding of the information challenges faced by our university research populations who choose to focus their investigations in the Global South. This was later amended to include the local research population and a focus instead on the heterogeneous research community in Monteverde, which is comprised of both local and international researchers who seamlessly interact with each other.

Monteverde was selected as the location for this study due to its uniqueness of place that has led to significant research being conducted there over time. Located on the Continental Divide in the Tilarán Mountains of northwestern Costa Rica, Monteverde is home to a spectacular and accessible cloud forest ecosystem, was an early international ecotourist destination, and has a unique history that has led to very early and continued sustainability and conservation efforts. Yet, simultaneously, Monteverde is a small, rural Costa Rican community that has been significantly impacted by a shift from a local agricultural economic base to an international tourism-driven economic base. About 40 study-abroad programs spend time in Monteverde each year (Wainwright and Villegas, 2006), and a number of these programs conduct locally-based projects and research that have potential to be of direct and sustained benefit to the local and surrounding communities.

In interviews conducted with researchers as part of the initial research project, the core local research community spoke of frustration regarding: (a) international researchers who take their locally relevant data with them when they leave, causing an inability of the local population to access international researchers’ work after they have left; (b) material based on local research that is published in cost prohibitive scholarly journals that are inaccessible to the local community; (c) lack of ability to access an organized body of Monteverde-based research information; and (d) slowness and unreliability of ICT infrastructure that affects timely research productivity. The digital library projects discussed below were conceived out of a desire to do something to work toward greater organization and access to a body of Monteverde-based scholarly information that is of obvious direct benefit to the local community as well as to future international education programs and researchers.

**Digital Libraries and Study-abroad in Monteverde**

The goal of creating digital libraries of materials produced by study-abroad programs in Monteverde was achievable for a number of underlying reasons. First, there is significant infrastructure in place to support researchers and study-abroad programs, and the Monteverde Institute is one of three places in the area that provides this infrastructure, which includes Internet connectivity (though slow and unreliable at times) and a small on-site library. The library is run on a day-to-day basis by a self-taught
local library supervisor, who is currently the only individual who knows and understands the extent of the small and eclectic library collection. She possesses invaluable local knowledge about the reports and documentation produced by study-abroad programs run through the Monteverde Institute, has been involved with maintaining these documents in print and digital format over the years, and thus became a crucial member of our digital library team. Also, the Monteverde Institute had the foresight early on to require students to leave copies of their work behind with the understanding that the MVI retains the right to provide access to this information into the future. Recently, as our understanding of digital intellectual property issues has evolved, this has been much more explicitly formalized as a written, signed agreement.

Next, the Dr. Kiran C. Patel Center for Global Solutions at the University of South Florida has partnered with the Monteverde Institute on a grant-funded study of water issues in the Monteverde Zone, and one of the outcomes of this project was the development of a small digital library of primarily gray literature that documents complexities of water issues for the local community. This digital library was created with the University of South Florida Libraries’ digital library software and with the systems support of University of South Florida library staff, the initial assistance of the author who was on site in Monteverde in the spring of 2007, and local labor.

Due to this established and continued partnership between the University of South Florida and the Monteverde Institute, the University of South Florida libraries generously agreed to continue supporting the use of their digital library software and systems expertise to allow for the creation of additional locally relevant digital library collections. With the digital library software in place, workflow documents and working relationships that had already been established, and the secure University of South Florida libraries server to house the digital library collections, the prospect of creating digital libraries to support access to the valuable contributions of study-abroad programs to the local community seemed conceivable. Through a collaborative effort described in detail below, full text searchable digital collections have been created that provide access to materials generated by two long term Monteverde-based study-abroad programs.

*Sustainable Futures*

Ongoing for 19 years, *Sustainable Futures* has been the longest running international education program offered at the Monteverde Institute. Billed as a service learning studio experience, students from the fields of architecture, landscape architecture, and community planning focus on sustainable design and community development projects within the ecological and social contexts of the local area. A collaborative effort between SUNY Buffalo, SUNY ESF, the University of Maryland and the University of Illinois, the program runs for ten weeks in Monteverde, and is taken for thirteen undergraduate or graduate credits. Documentation that students create include architectural drawings, comprehensive site plans, PowerPoint presentations, project reports, photographs and more – materials that have been used in actual design and planning efforts over the years. Accessibility to the materials produced by students in *Sustainable Futures* is of direct relevance and importance to the local community, as well as to future students and researchers who benefit from drawing on past work. The *Sustainable Futures* digital library was created during the summer of 2008 and updated in summer 2009, providing accessibility to born digital materials that have been generated by the program since 2002. The collection is available through the Monteverde Institute Library web site.

*Globalization and Community Health*

Since 2001, the *Globalization and Community Health Field School*, a University of South Florida program based out of the Monteverde Institute, has focused on field-based research of health and health care issues in the Monteverde area, while developing an understanding of these issues within the larger framework of rapid social, cultural, and economic changes associated with globalization. Available to
applied anthropology students and students in health related disciplines, the program is five weeks in
duration and students receive six graduate or undergraduate credits. Students collect data, create final
research-based reports and presentations, and submit both English and Spanish versions of their work. The
material they produce is of direct value to local community practitioners as well as international
researchers and students, and the Community Health digital library, created in the summer of 2009, allows
for full-text, completely bilingual access to these materials, available as a link from the Monteverde
Institute web site.

Collaboration

The digital library projects could not have happened without multi-institutional collaboration and
cooperation, drawing on complimentary resources, expertise, and experience. First, the author’s home
institution, the University of Vermont, provided support that enabled the author to be on site in Costa Rica
to direct the digital library projects. Additionally, the ongoing commitment by the University of South
Florida Libraries to utilize their digital library software and systems support provided the technical
infrastructure that has been central to the ability to create the digital libraries. Faculty from the institutions
sponsoring the study-abroad programs have been very supportive and were available to answer questions
that arose while working with their documents. In Costa Rica, the Monteverde Institute enthusiastically
supported the idea of creating greater information access to important bodies of information produced
locally through their programs, but to which access had previously been extremely limited. For the
Monteverde Institute, such an initiative could not have taken place without this outside assistance that
included access to a secure server on which to house the digital collections, access to the technology to
create the digital collections, and access to expertise and labor that is not available locally. The last piece of
this collaborative effort, and the piece which turned the projects from an idea into reality, was the labor
necessary to create the digital libraries.

With an understanding of the principles and complexities of creating digital libraries that was
acquired through involvement setting up the infrastructure of the first Monteverde Institute digital library
project, it was evident that a body of additional professional labor was needed to complete these projects.
As the field of digital librarianship is quickly emerging and special certificates in digital librarianship are
now being offered in graduate LIS programs, a new generation of library and information professionals are
being trained who are developing specific expertise in this area. The idea was conceived to create a
graduate student internship that would provide an opportunity for LIS graduate students to be involved with
a digital library project from beginning to end, within the larger context of gaining an understanding of
information issues and challenges in the Global South. Through Syracuse University School of Information
Studies, this internship opportunity has now been offered for two years, as an on-site six week summer
internship that takes place at the Monteverde Institute in Costa Rica.

In the summer of 2008, two students traveled to rural Costa Rica for this internship, and became
part of the first team that created a digital library of materials generated by the Monteverde-based study-
abroad program, Sustainable Futures. The team -- comprised of the project director, the interns, and the
local library staff member -- collectively discussed issues and made decisions related to the following:
intellectual property, workflow, selection criteria and assessment of materials for inclusion, assignment of
high quality and consistent metadata, and more. At the same time, the University of South Florida offered
valuable systems support from a distance. The daily challenges inherent in working in environments of
limited resources and ICT infrastructure limitations were part of the working landscape, and added an
important dimension to the educational experience.

The internship experience went well beyond the creation of the digital library, and students lived
with local host families, became immersed in the local culture, and took 4 -6 hours of Spanish classes each
week. While there was no Spanish language requirement for the internship, the digital libraries were created with both Spanish and English speaking user groups in mind. Each record contains bilingual titles and summaries of the content, and searches can be done in either Spanish or English, with search interfaces available in both languages. One intern was proficient in Spanish and contributed to the translation effort, with the assistance of the local library staff member. At the end of the internship experience, the Sustainable Futures digital library collection had about 170 fully cataloged digital objects in it, and most importantly, access now exists to a previously inaccessible body of information that will be useful both to the local community and future international students and researchers.

Building on the success of the 2008 internship experience, one student returned and one new intern was recruited for the summer of 2009. Interns for these projects are selected through a competitive application process. The 2009 project focused on creating a digital library of materials generated by the University of South Florida program, Globalization and Community Health. This was a smaller collection of final reports and PowerPoint presentations; the benefit of the previous year’s experience helped a great deal with efficiency of decision making, workflow, and trouble shooting. In addition, Internet connection speed and reliability far exceeded the experience of 2008. Through the initiative of the new intern, “best practices” documentation was created to assist with future projects. Records from the previous year’s Sustainable Futures course were additionally added to that collection.

Using a consultant team approach, other related library administrative issues and access issues were addressed as part of the 2009 internship experience. Publicity, outreach, and education about the digital libraries and how to effectively use them became an additional important focus. Through multiple sessions with targeted user groups and constituencies, the 2009 internship experience also included an opportunity to prepare and present instructional materials in a bilingual setting, conducted with the aid of a translator.

The Globalization and Community Health digital library is fully bilingual, as documents for the program are prepared by students in both English and Spanish, in order to be of value to the local community. While smaller in size than the Sustainable Futures collection, the Globalization and Community Health digital library provides access to a very important body of information that has the potential to directly affect the well-being of the local community. Plans for wider publicity of this digital collection for Costa Rican health care practitioners are currently underway.

The collaborative effort that has gone into the creation of these digital libraries has been central to the success of the projects. The multi-institutional collaboration has demonstrated that there is much that is possible when combining perspectives, resources, and expertise across institutions and cultures. The process of creating the digital collections has been as rewarding as the end product. For the interns, the experience was extremely rewarding and has engendered loyalty for continued involvement with work for the Monteverde Institute into the future.

Project Challenges and Opportunities

When working in an environment of limited resources, there will always be challenges. The largest challenge that these digital library projects presented were the ICT infrastructure issues that are inherent in working in most areas of the Global South, particularly in the rural areas. While unstable Internet connectivity and limited bandwidth slowed the work down to a crawl at times, it also served as a reminder that our digital libraries should be designed with these realities in mind. For example, this meant that we could not upload large files and either had to break them down into multiple smaller files, compress them, or not use them. In addition to file size limitations, there was frustration surrounding the slowness with which work could get done, due to unstable connectivity. This was much more of an issue in 2008,
when we had to resort to taking our work to local hotels or Internet cafes consistently during our last two weeks in order to accomplish the goals we had set for ourselves. However, the challenges were completely offset by the larger context in which we were working, and the lessons learned about information access limitations and issues that much of the world faces.

On the other hand, the opportunity to work closely as a team of colleagues, work through problems and issues collectively, and bring resolution to complex questions, proved to be an extremely rewarding experience. Whether tackling questions about copyright, assigning consistent metadata, establishing our own list of metadata, or working through larger Monteverde Institute library administrative issues, the thoughtfulness and professionalism of the student interns, sharing their state of the art knowledge and enthusiasm for the work, provided the basis for the success of these projects.

While the process of creating the digital library collections was the stated purpose of the student internship experience, the end goal remained particularly noteworthy. The digital library collections are a means to an important end of providing both the local community and future international students and researchers access to an important body of locally-based information that has particular value within the local context, but was not previously organized or accessible. The digital collections are browsable as well as searchable either by field or by full text; each record has a full set of metadata attached to it.

Recognizing and supporting the role of study-abroad students as information producers, particularly those who focus on community-based and service learning projects in developing country contexts, adds important value and immediate relevance to their work when it becomes accessible to the people who can most immediately benefit from it. In addition, as librarians who possess the skills to support our students and researchers by providing access to their work in an organized fashion, we are at the same time contributing positively to a wider social mission. As centers for digital initiatives and digital collections become an important part of the academic library landscape, and institutional repositories of local intellectual content are increasingly being created, this appears to be an opportune time to consider how we can use these technologies and our skills to support our international researchers and study-abroad programs. In the process, the academic library has the opportunity to contribute to greater information equity on a global, but grassroots level.

**Conclusion**

This discussion has focused on one example of support for study-abroad programs in their roles as information producers of materials of direct value to their host communities. As the literature suggests, there is great potential and an important role to play for digital library collections in the developing world, that provide access to historically elusive bodies of research information produced by international researchers. By extending traditional collaborative relationships across institutions and engaging LIS graduate student interns in the process, it has been possible to support study-abroad students as information producers in the Monteverde area. Preparations are currently in process for the next digital library project, slated for the summer of 2010, which will support the work of tropical ecology study-abroad programs in the area.

With available technology, expertise, and labor, it is more conceivable that libraries consider supporting the work of their study-abroad students through their own digital collection centers. The World Learning’s School for International Training Study Abroad Program, for instance, supports their programs with digital library collections of their students’ work (http://digitalcollections.sit.edu/isp_collection/). As study-abroad student programs increase, particularly in areas of the Global South, the expectation that student work is placed into a digital library collection can occur at the onset of the program through communication with faculty. This will assist student ability to disseminate their own work to their host
communities upon completion, inform local community stakeholders of accessibility options, and work toward an end product that will continue to have value well beyond the end of their time abroad.

With increasing numbers of LIS graduate students interested in digital librarianship, a body of emerging, talented professionals exist who can offer valuable assistance in creation of digital libraries through internship experiences. In the examples presented above, the internship itself was a fairly unique study-abroad experience. In searching the Internet for opportunities for graduate LIS students to gain experience working in the Global South as part of their education, it appears that these opportunities are limited, and grassroots, community-based experiences are rare. However, there is interest among LIS students in issues of global information equity and working toward lessening the digital divide.

In the realm of academic librarianship, there is great potential to support the work of our students and faculty who conduct research in areas in the Global South. Whether working to create digital libraries from home or abroad, there is a significant role to play in providing access to information of value to the world communities that host our students and researchers.

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3 Notably, Simmons College offers a list of international initiatives including an opportunity for students to spend time in Nicaragua establishing a system of lending libraries at the community level. For more information, see: http://www.simmons.edu/gslis/about/initiatives/international.php
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Re-Tooling Library Services for Online Students in Tough Economic Times

Robin Lockerby
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National University Library

Abstract
At a time in our economy when library budgets are strained and staffing is under the microscope, we need to reassess and re-tool our library services for online students to provide quality, depth, and community without causing meltdown. The authors analyze some of the re-tooling undergone at their library to meet the shifting demographics of student who in ten years have grown from 1,000 online students to 14,500 and increased to 65% of the students now taking online classes. To meet this challenge, the Library centralized library services by closing the regional Library Information Centers and established a Multimedia Department focused on developing tutorials and online training materials, established an outreach librarian position and worked with reference and instruction librarians to expand their roles as liaisons to the various academic programs. The library is learning to work smarter, not necessarily harder, and much leaner.

Introduction
As noted in the report, College of 2020: Students (2009) by the Chronicle Research Services, the growth of hybrid and online classes is changing the landscape of traditional college education. The Chronicle survey indicates that up to 60% of students will be in online classes by 2020. With the move to online, students are expecting more flexibility of when and how they attend class. Those of us involved in providing services to non-traditional students are familiar with andragogy and the demands of adult learners who prefer problem-based learning related to their life experiences and who must juggle full time employment and family life while taking classes. Many of us work with programs designed around alternative time frameworks such as intensive one or two month courses. We understand the pressures our students live under and their learning preferences. As more and more students choose alternative class formats, the question we need to be ready to answer is how the library can support their learning and research needs and maintain a learning community. The jurisdictional issues as to who is responsible for online programs are also difficult to clearly define. In the past, distance education and online education were part of specialized departments which often had their own library services. But when over 60% of the traditional programs will be online, the distinction between distance learning and core programs is very blurred.

The Standards for Distance Learning Library Services (2008) developed by the Association of College and Research Libraries (ACRL), Distance Learning Section are core to the concept that all students are entitled to library services and resources wherever they may be. The Standards include a “Bill of Rights for the Distance Learning Community” which expands on the philosophy of entitlement. Part II of the document specifies institutional requirements for library services: fiscal responsibility, personnel, library education, management, facilities and equipment, resources, services, and documentation. Underlying the Standards is a belief that the “[m]embers of the distance learning community, including those with disabilities, must be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to those provided for students and faculty in traditional campus settings” (Association of College & Research Libraries, 2008, pt. 1).

Distance learning librarians are in a position to lead the way in helping faculty and administration provide the best support for this new breed of student who will be challenging the traditional learning environment. With the rapid growth of online reference, books, and journals, some aspects of providing service are easy, but supporting online programs is much more than a collection of e-books and article
databases with full text. Ease of access, webpage design, reference support, and instruction are critical library services that play a role in supporting the online learning community. At the same time, the solutions we provide may not preserve the status quo of our distance learning world we have nurtured for so many years. In today’s economic climate, change is the only constant we live with. This article will focus on how National University and its library have met change head-on.

**About the National University and the Library**

National University, established in 1971, was organized to meet the learning needs of adult students. With San Diego being a Navy town, many of the first faculty and students were drawn from the military community. The students were typical adult learners in that they wanted to prepare themselves for career changes and the job market. They wanted to take classes that built on their knowledge and provided them opportunities to apply their learning in practical, problem-based situations. National’s accelerated format of one class per month (2 nights a week and 2 weekends a month) appealed to our working students. Academic Learning Centers were established close to major freeway commutes used by target student populations to enhance visibility and ease of access. It did not take long for regional academic centers to be established throughout California, in Sacramento, San Jose, Fresno, Bakersfield, Los Angeles, Costa Mesa, and San Bernardino. From the get-go, National pioneered an alternative higher education program that did not meet traditional descriptions of higher education institutions. There is no one place to call the main “campus.” The fledgling central library was based in San Diego. As regional centers grew, branch libraries were established at the larger locations. Smaller libraries, sometimes referred to as reading rooms, were included in all the remaining centers. By 2000, National University had 25 academic learning centers.

The year 2000 is a watershed year for the NU Library. It moved to a new building, established its first e-book collections (one of the largest at the time, buying all titles available through NetLibrary), and embraced the world of online full-text databases. National University, proud of its model that allows it to quickly adjust to economic and demographic trends, challenged the Library to step into the virtual world. All of the regional library collections were centralized in San Diego and in their place virtual libraries staffed with one professional librarian were established in the regional centers. The regional librarians, fondly called LIC (Library Information Center) librarians, put a face to the lost stacks and new electronic resources. They assisted students and faculty through the transitions, provided reference and instruction, and helped communicate library initiatives. Though the faculty and students lamented the loss of their libraries, they soon became deeply attached to “their” librarians. This new model made economic sense. Not only did the library not need to purchase duplicate titles for the regional center libraries, the library could now purchase more variety of resources and keep collections current. Enhanced document delivery included free 2-day delivery of books and 24-hour delivery of articles not available online.

From 2000 to 2009, there was substantial growth in the number of online classes offered by the university (see Figure 1). Growth of online programs, which replaced satellite video conferencing, grew because of student demand and administrative decisions to combine small classes. Figure 2 shows that in 2000, the online student body was approximately 1,000 students; in 2003, 1,771 students were enrolled in online classes; by 2006, 5,645 students took all of their classes online (Phadungtin, 2007). Today, National University’s online programs enroll over 65% of its students (16,350 students) in online classes (National University, 2009).

![Figure 1. National University Online Classes](image-url)
Strategic Planning Process

While University enrollment has been stable over the last five years, even showing a modest increase, the demographics of where students are located has changed dramatically and is ahead of national trends for online education. The impact on the academic learning centers, particularly smaller regional centers, was that admissions were constant, but students taking classes in center classrooms were down. More and more students were switching to online classes. Lower student-in-class (SICs) counts forced regional academic centers to carefully look at their operations. The Library was asked to come up with several re-organization scenarios to improve service for online students. This process coincided with the Library’s strategic planning process. In the spring of 2006, staff, faculty, and an expert panel of external reviewers —Alane Wilson (OCLC), Elizabeth Dupuis (University of California, Berkeley), Mary Jane Petrowski (ACRL), and Randy Burke Hensley, (University of Hawai‘i at Manoa)— built on the 2003 strategic plan and reviewed the mission and vision, identified strengths, and recommend strategies to better meet student needs, particularly the needs of online students. The findings became part of the National University Library’s 2010 strategic plan: Fast Forward (2007). The seven strategic plan goals all focused on accessibility and ease of use, service, and assessment.

As the Library management team begin to review options for meeting the needs for online students, several initiatives emerged: 1) close regional Library Information Centers (LICs); 2) enhance the role of the instruction and reference librarians to better serve online students; 3) develop a multimedia department to support online delivery of library training; and 4) improve the Library’s Web presence. In reviewing research related to online students, ease of access to library resources is critical for online students, and the library’s web site is one of its most important tools. In 2003, Odin Jurkowski studied library web sites and interviewed librarians regarding library services for distance learners. He found that for remote students even the most basic skill of how to contact the library was difficult. The study distilled down the data into six categories: 1) more online access; 2) access and delivery; 3) seamless web site; 4) integrate library material into course management system; 5) tutorials; 6) more needs analysis of service functions. Web site functionality continues to be an issue we struggle with at National University. The ability to consistently maintain the Library web pages is an allusive process out of the Library’s control.

Library Reorganization

The centralization process of closing the LICs was difficult. The regional librarians were an integral part of life in the regional academic centers. Not only did they provide virtual reference service and library instruction, but they partnered with center staff and faculty to build a strong sense of community. The regional librarians participated in Library initiatives and came together for training several times a year, so they were also part of the Library staff. The downside was that no matter how wonderful and appreciated they were, the regional LIC librarians had less and less SIC contact and the need to provide services to online students continued to grow. Figure 3 summarizes some of the issues identified in the planning process. Ultimately, the LICs were closed in the fall of 2006 and two new library positions were added in San Diego, one in reference and one in the newly developed multimedia department. The LIC librarians were encouraged to apply for one of the new positions, but none were willing to relocate.
| Strength                                      | • Physical presence representing the Library in the regions  
|                                             | • Faculty support (research assistance)  
|                                             | • Student support (reference & instruction)  
| Weakness                                     | • Isolation (communication)  
|                                             | • Inconsistent levels of service  
|                                             | • Staff cost (10 regional librarians)  
| Opportunities                                | • Incorporate two new positions in Central Library  
| Threats                                      | • Diminishing student and faculty contact  
|                                             | • Growing online programs  

*Figure 3. Library Information Center SWOT Analysis*

**Instruction & Reference Departments**

The National University Library’s Public Service Department, in 2006, consisted of the Circulation/Access Services group, an Instruction group (coordinator and 2 librarians), and a Reference group (coordinator and 2 librarians). All librarians participated in collection development, desk and e-mail reference services, and library instruction. As a result, the distinction between the librarian groups was confusing and librarian loyalty to their coordinator’s initiatives sometimes created stress instead of cooperation. One of the first steps in the proposed reorganization was a SWOT analysis (see Figure 4). Eventually, the four public service librarians and one new position garnered from the closing of the LICs were merged under the reference coordinator. Librarians in other departments continued to provide desk and e-mail reference support with reduced time commitment.

One of the biggest differences in the duties of the reference group was that instruction was assigned to the newly developed Multimedia Department, which was tasked to develop online tutorials and other instructional resources. Reference librarians could focus on their collection development subject areas and reference service. Faculty collaborations were largely limited to reserve/reading lists and research assistance. In an effort to reach more online students, the reference group explored instant messaging services, but dropped it after three months when there was minimal student participation. *LibStats* was added to help capture and track reference questions.
<table>
<thead>
<tr>
<th>Strength</th>
<th>Two Departments</th>
<th>Reorganized Department</th>
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<tbody>
<tr>
<td></td>
<td>• Staff could work in area of their strength and interest (reference/instruction)</td>
<td>• Unified reference management philosophy</td>
</tr>
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<td></td>
<td>• Subject selectors developed areas of reference expertise</td>
<td>• More staff, less broad responsibilities—ability to expand skills</td>
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<td></td>
<td></td>
<td>• Librarians relocated to other departments still had desk duty and reference assignments</td>
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<tr>
<td>Weakness</td>
<td>• Two different reference / instruction management philosophies</td>
<td>• Reference librarians told not to provide library instruction—role of new Multimedia Department</td>
</tr>
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<td></td>
<td>• Tendency to focus on local instruction &amp; reference</td>
<td>• One service desk meant that librarians required to provide circulation and non-professional functions while on desk</td>
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<td></td>
<td>• Librarians unwilling to participate off-site or in areas other than subject area</td>
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<td></td>
<td>• One service desk meant that librarians required to provide circulation and non-professional functions while on desk</td>
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<td>Opportunities</td>
<td>• Growing online population</td>
<td>• Growing online population</td>
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<tr>
<td>Threats</td>
<td>• Flat or dropping circulation, patron, reference, and instruction statistics</td>
<td>• Flat or dropping circulation, patron, reference, and instruction statistics</td>
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*Figure 4. Reference and Instruction SWOT Analysis*

**Multimedia Services Department**

The SWOT analysis for the new Multimedia Department (see Figure 5) demonstrated conclusively that the new group had access to cutting edge technology, talented instructional design and development staff, and administrative encouragement to be creative. The team quickly went to work to develop several promotional and instructional resources including *iLibrary*, the Flash-based library orientation tutorial, and *Charting a New Course*, an overview of how to navigate the Library Web site. The philosophical approach was to provide just-in-time (JIT)/on-demand (OD) training for students, as advocated by Ferguson and Ferguson (2005) in their research, as well as support the *National University Library Information Literacy Plan* (Secord, Stillwell, & Lockerby, 2007). The *Plan* is intrinsically tied to course and program learning outcomes. Previously, library liaisons and regional librarians put a bulk of their energies into library instruction for key “target” classes based on program content. The downfall of this approach is that it is dependent upon the librarian developing a relationship with instructor for the targeted classes. In a system, where almost 90% of the classes are taught by adjunct faculty and the classes change each month, it is difficult to coordinate.

To enhance online learning in 2004, the University began using *iLine* for VOIP instruction. The Multimedia Department decided to make recorded introduction to discipline and advanced discipline sessions for each of the academic programs. By the end of the first year, they developed an archive of 27 presentations and hosted them on the Library’s Training Tools page. Sessions that were built into course syllabi templates were used heavily. Other presentations distinguished. The University’s switch to Adobe Connect in 2008 improved the quality of the recordings. Liaisons now work with lead faculty to include recorded session in classes as an option to online presentations. The Multimedia Department is also collaborating with liaisons as subject experts to produce discipline specific presentations using Adobe Presenter which enhances PowerPoint and is much easier to update than the original productions created in Flash.
| Strength                  | • Technology                  |
|                         | • Talented designers          |
|                         | • Teamwork                    |
| Weakness                | • Balance JIT/OD and Information Literacy Program Outcomes |
|                         | • Most of the team are not librarians and first job in higher education |
|                         | • Designing in Flash is cool, but updating is more difficult and time consuming |
| Opportunities          | • Student-based active learning (Hill, Song, & West, 2009) |
|                         | • Web 2.0 social networking opportunities (Seker & Price, 2007; Sodt & Pederson, 2009) |
| Threats                | • Too good—pulled off projects to create projects for others |
|                         | • Constant Web site redesign and vendor changes/updates |

*Figure 5. Multimedia Department SWOT Analysis*

**Looking Ahead**

Twice since the initial reorganization, the Reference Department has had changes in leadership. Each time, the focus has been on the importance of the liaisons taking more responsibility for outreach to online students within their subject areas and increasing collaboration with faculty on library-based assignments (Veal & Bennett, 2009). The perfect plan is still to be found. With collection development, reference duties, and instruction tutorial development, their energies are spread thin. Students and faculty who contact the librarians tend to be the ones served rather than a proactive approach to all online students. The effectiveness of these efforts depends greatly on the liaison’s relationship with the faculty and the library’s ability to allow flexibility in staffing demands. Several National University librarians are experimenting with being embedded in online classes, but with the sheer number of online classes each month, planning is critical. Lillard’s (2006) and York and Vance’s (2009) articles on embedded librarians highlight research that supports the value of embedded library service as a key marketing tool for libraries, one that raises awareness both for students and the institution. In fall of 2008, the Library developed an Outreach Librarian position to re-build relationships with regional centers and to coordinate liaisons in their outreach activities. Possible solutions include:

- Provide more embedded-librarian opportunities
- Work with eCollege to develop a Library threaded discussion to which students in online classes can link rather than the librarian joining individual classes (2,000 each month).
- Shift collection development responsibilities to the technical services side of the library.
- Provide longer online reference support to be available when our adult students work online—possibly outsource the service.
- Replace librarians on desk with a trained paraprofessional

One of the joys of working at National University is the ability to experiment and try different models of service. We have made progress in meeting the needs of online students, but it has forced us to be creative and our jobs as traditional librarians have grown to fit the services we offer.
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Real-Time Global Instruction in a Virtual Environment

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Abstract

How do the needs for a real-time connection in the global, virtual world of online learning get met? Librarians at the University of Maryland University College (UMUC), a leader in distance education and one of the eleven degree-granting institutions within the University System of Maryland, are using Web conferencing software to provide real-time instruction sessions to its students around the world, including in the war zones of Iraq and Afghanistan. Using the Web conferencing software Adobe Acrobat Connect real-time traditional library instruction sessions have been provided to Doctor of Management students located in Taiwan. In addition, Wimba, which replaced Connect at UMUC, is being piloted in selected sessions of the required online graduate-level library research course (UCSP 611). Not only are students located globally able to interact with the instructor and ask questions in real-time, but these sessions are also recorded and added to the course management system WebTycho to serve as a refresher and made available to those unable to attend the actual session. Anecdotal comments from the Doctor of Management course instructors as well as survey results from the first round of UCSP 611 sessions demonstrated that this method was quite successful. As one student said, “This would be great if it was offered for all online classes. It gives me a sense of comfort because it makes me feel like I am actually in the class.” This presentation will discuss the “nuts and bolts” of providing such learning opportunities, a demonstration of how this works, as well as a discussion of assessment and lessons learned.

[Editor’s Note: This paper was previously published and can be found here: Lietzau, J. A., & Mann, B. J. (2009). Breaking out of the asynchronous box: Using Web conferencing in distance learning. Journal of Library & Information Services in Distance Learning, 3(3/4), 108-119.]
Web Subject Guides: Virtual Connections across the University Community

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Jane Hutton
West Chester University of Pennsylvania

Abstract
A year ago, West Chester University Libraries began using the LibGuides library content management system. In the first year since implementing LibGuides (http://subjectguides.wcupa.edu/) our subject librarians have developed numerous subject guides, replacing outmoded and outdated web pages with new guides that have a more appealing format. We have also found that web guides can be used for projects beyond the traditional library subject guide. One of the best features of the LibGuides software is that it allows our subject librarians to easily repackage information and resources in multiple ways that suit different audiences. In this paper we describe how we have used these guides to respond to the needs of our university community and how we hope to expand the potential uses of the web guides.

Background
West Chester University of Pennsylvania (WCU) has not been at the forefront of distance education. As a regional comprehensive masters university located at the edge of a large metropolitan area, and rated by Kiplinger’s as a “best buy,” WCU has enjoyed a steady rise in applications and enrollment. While many faculty members have designed hybrid courses with online components, until very recently WCU offered very few true online classes. Then, with the arrival of a new University president in the spring of 2009, distance education became a stronger priority. Teaching faculty are now developing new online courses at a faster rate. The librarians at WCU libraries have found themselves in a position of needing to respond swiftly to a changing campus environment (without any increases in staff or funding to date).

One of the approaches we have taken is to develop online research guides (we selected LibGuides) to provide resources to distance education students. Admittedly, this was not the primary purpose that we had in mind when the library purchased LibGuides software in the fall of 2008. At that point, the librarians simply wanted a tool to replace old web pathfinders that were in desperate need of updating. For the most part, the old guides were not true subject guides, but just lists of web sources. It was only after beginning to use the guides that their applicability for distance education students was realized.

A Very Brief Introduction to LibGuides
LibGuides is one of a string of library content management systems that have been developed in recent years. LibGuides is a proprietary system, while others are institutionally-developed and/or open source. A number of articles have summarized and evaluated the capabilities of LibGuides software (Bushhouse, 2009; Judd & Montgomery, 2009; Kerico & Hudson, 2008; Moses & Richard, 2008). Thus we will not review all system capabilities in this paper, but will point out a few factors that influenced our selection. LibGuides offered a fair amount of customization while still remaining relatively low-cost and easy to use. In addition we did not have the technical personnel to develop our own system or customize open source software.

Like many web subject guide systems, a major advantage of LibGuides over the WCU Libraries’ old web guides is that any individual can create and develop a guide. In our old web page listings, all edits had to be made by the Electronic Resources Librarian in her role as library website administrator, which separated the subject area librarian from immediate interactivity with the subject content. This detachment left most subject pages languishing from lack of attention. The LibGuides system, on the other hand,
enables a sense of responsibility and pride in publishing as librarians can create and publish their own content. A connected downside is that each librarian is left to create (or not create) guides to the level of his or her own abilities and interest level, which can lead to great difference among the guides in format, content, and design aesthetics. To support librarians who are less familiar with the web publishing environment the Electronic Resources Librarian has devoted time to individual and group training sessions and has developed a “WCU Librarians Share Guide” with examples of link formats and search box scripts. Overall, we feel that the freedom to develop one’s own guide dramatically outweighs the negatives.

The primary advantages and characteristics which we discovered in LibGuides are present in other web subject guide software systems, so we believe that the uses we found for our LibGuides subject guides will apply in other systems. Thus we will refer to our guides as web guides or subject guides rather than LibGuides throughout the remainder of the paper.

Subject and Class Guides

Librarians at WCU Libraries began by creating traditional subject guides that provided basic resources for a discipline. Within a year, guides were developed for many subject areas. However, as Reeb and Gibbons (2004) have shown, traditional subject guides often do not appeal to millennial students who are used to and prefer highly personalized and contextualized information, and who do not understand the arrangement of information into the traditional academic disciplines. They conclude that:

Guides that are organized or delivered at the course level appear to be more in line with how students approach library research. If librarians are to meet students where they are, we need to move away from the traditional use of discipline-based to more course-based devices for organizing library resources (p. 128).

The librarians who have created course guides have adopted several different approaches. Some have created separate tabs called “pages” within their existing subject guides with extra information particular to that course, as seen in the guide for Languages and Cultures, which has separate pages for two courses following its main tabs (see Figure 1). A main advantage of this format is that when a librarian or teaching faculty member introduces students to the course guide, the students are automatically made aware of the larger subject guide, to which they will hopefully return in the future for help with other research assignments.
A second approach, used primarily by librarians who teach a large number of library instruction sessions, has been to tailor the larger subject guide to fit the needs of their courses. This was the approach used by the librarian for English, who teaches a number of sessions for upper-level undergrad and graduate classes each semester. She combined the information that she regularly taught in these types of classes into one ‘English’ guide. The challenge of this approach is to maintain a balance between keeping the content of the guide general enough for a wide audience but also specific enough to be useful to individuals from various classes. That librarian is still planning to add some class specific tabs to the guide in order to include information like suggested reference sources and subject headings that truly apply to only one class. The librarian for Social Work also used this approach, creating a guide that meets the needs of two classes (one undergrad and one graduate level) that regularly meet for research instruction. The advantage of this format is that there is less work involved for the librarian compared to developing multiple guides. However, it will only work well for subjects that tend to have similar assignments in various classes (such as literature research papers). Classes that have unique assignments will always need a separate tab or guide.

Developing a free-standing guide for an individual course has not proven popular yet at WCU Libraries, probably because more work is required to start a new guide from scratch compared to expanding an existing guide. One librarian did create a guide aimed at the many sections of general education writing courses (WRT 120 and 200), but chose to give the guide a subject name, News and Current Events, to give it broader applicability.
One issue which we will need to address in the near future as more course guides are developed is the establishment of consistent format and naming conventions to make it easier to locate an appropriate guide. In addition, the “Browse by Subject” display of the default LibGuides “Subject Guides Home” does not offer sufficient granularity to optimally direct users. One option is to develop a customizable library web page as a gateway to the guides, but that seems like a step backward in web subject guide management, because such a page would once again require development and maintenance by the library website administrator.

But Do They Actually Get Used?

One issue with subject guides is that, for all the work that librarians put into creating subject guides, they often are used very little. In addition to the fact that students seem to prefer course specific guides to broader subject guides, they also often have trouble identifying the correct guide to help them or even locating guides on a library’s website in the first place (Reeb & Gibbons, 2004). Staley (2007) summarizes the findings of several studies showing that most students have never used a research guide and do not even realize that such guides exist. Our experience at WCU Libraries corroborates these findings to an extent. Our usage statistics indicate that it is not simply enough to create and post a guide; it is also necessary to promote it in some way, or preferably, multiple ways.

For example, WCU Libraries’ Humanities Librarian completed guides for three subject areas (Art, Philosophy, and English) in August of 2009. The Art guide was not publicized at all and from the period of September 1 through November 30 and received only 44 hits, some of which presumably came from librarians. The Humanities Librarian sent the link to the Philosophy guide to several members of the Philosophy department, along with the suggestion that it might be particularly useful for the department’s graduate students. That guide received 101 hits during the same period. The English guide was used as a teaching tool during several upper-level undergraduate and graduate library instruction sections in late September and early October. That guide received 742 hits in the September through November period.

This spike is reflected in other guides that were used in class sessions. The librarian for Theater used the Theater guide as she taught two sessions (47 total students) for an introductory Theater classes in the first week of September. While the Theater guide had received only 21 hits in August, in September the number grew to 385. Even after the hits for the students attending the classes are removed, enough hits remain to show that students returned to the guide later, often multiple times. These results are very much in line with those reported by Strutin (2008) at Santa Clara University, where science guides that were used in instruction received a high number of return visits. The Social Work guide provides another example. The librarian for Social Work taught four instruction sessions for an undergraduate class, totaling 93 students, on September 14. The Social Work guide had only received 30 hits in August and jumped to 474 hits for September. While the numbers did drop in the following months (108 hits for October; 52 for November) they did remain higher than before the instruction sessions, indicating that students were perhaps returning to the guide for help with other assignments (see Figure 2).
The positive implication for this trend is that if students are shown where a guide can be found and how to use it, they will return. This correlates with the findings of a survey done at San Jose State University, which found that students who had received library instruction were more likely not only to revisit the guide that they had received instruction on, but also to visit the subject guides homepage (Staley, 2007). All the course guides developed to date at WCU were in fact created in response to a request from a classroom faculty member for an information literacy instruction session. Planning for the session automatically leads to the librarian learning about the research needs of that particular class and allows them to create a highly specialized guide. As WCU Libraries extends its use of subject guides for distance education classes, the problem is how to create guides for distance education students who do not participate in a library instruction session. Librarians at WCU Libraries need to address how these students will be connected with appropriate guides.

Moving From In-class to Distance Education

One venue to connect online students to online resources is through a course management system (CMS). Most students already log into the university’s CMS on a regular basis to get information related to their classes, so integrating library resources into the CMS places them in a location where the students already go. WCU uses the Blackboard CMS, which includes a visible tab in the system for Library Services, with links to commonly-used resources and services. While adding a link to the library “Subject Guides home” page is one option, users would need to click multiple times to reach a relevant subject guide, and thus will no doubt lose interest before reaching useful content. The most advantageous approach is to embed a link to a library course guide directly in the course itself.
But getting teaching faculty to embed a guide requires communication and cooperation between faculty and librarians which may be highly idiosyncratic, based on past relationships, individual personalities, or even broad institutional practice and traditions. Since WCU has no established patterns for library services to online distance students, we will need to work on new ways to encourage collaboration. Faculty need to be made aware that the guides exist -- or could be created to meet the needs of their classes -- and taught how to embed them in their course pages. A possible first step could be to create a page of “Tips for Faculty” which would include how to insert a link to a subject guide. A screencast to illustrate the process might also be useful. WCU’s Blackboard “Faculty Help” page could be another venue for promoting our subject and course guides.

In parallel with the technological supports for embedding library guides into online instruction, it is important to take advantage of opportunities to publicize our customized resource guides through person-to-person contacts on university-wide committees and task forces. Presentations at university-sponsored events such as the annual “RECAP: Resources for the Electronic Classroom” conference also provide opportunity for librarians to showcase the subject guides to teaching faculty. This type of promotion will be of particular importance in attracting faculty who have not made use of the library’s instruction program in the past, but may be interested in having course guides created for their classes.

**Beyond the Subject Guide**

After librarians at WCU Libraries became adept at creating guides, they began to see opportunities to move beyond subject and course guides for students and develop guides aimed at connecting with the campus in general and faculty in particular.

Because the web guide software made it easy to create guides quickly, one use was to provide information about library/campus events. In February 2009, the Special Collections librarian worked with history faculty members and a staff member from the WCU’s Student Support Services to develop a series of events around Abraham Lincoln’s 200th birthday. The Special Collections librarian created a web guide for the celebration, which included both information about the individual presentations and also links to websites and library resources on Lincoln. After the series was completed, she removed the information about the events, but kept the list of resources available in the guide.

LibGuides software allows for multiple authors, which makes it easy for librarians to collaborate on guides with faculty and staff in other departments. WCU’s Electronic Resources librarian used this feature to create a guide in concert with staff at the university’s Career Development Center. The guide blends together library and career center resources. While designed primarily to help students make decisions about careers and help them find jobs, this guide has also proved to be useful to librarians. Several professors who teach general education writing and speaking courses have assignments that include research on careers and the guide can be used both in library instruction sessions for those classes and by librarians assisting students at the reference desk.

Another example of a successful non-subject guide is WCU Libraries’ new information literacy page. The Information Literacy librarian took the old page, which had a basic list format, and created a new guide with two separate pages, one for information literacy instruction and one for information literacy assessment. Both pages are aimed at faculty members rather than students. In addition to describing the library’s instruction program and providing names of subject librarians as the old page did, the new page also has a section of videos and tutorials and a link to a view-only version of the library’s instruction calendar. The latter allows faculty to check room availability before they schedule their classes.

The Information Literacy Assessment page was developed as a response to WCU entering into its ten-year reaccreditation process. WCU falls under the review of the Middle States Commission on Higher Education, which is now including information literacy assessment as a requirement. Each department on campus has to conduct its own assessment of their students’ information literacy competency. Since this was a new requirement, many departments needed help to get started. The library’s Information Literacy Assessment page was developed to provide departments with the basic tools to get started: definitions, information literacy standards, and sample rubrics and questionnaires.
The Information Literacy guide has actually been WCU Libraries’ most frequently visited guide. It received 1025 hits in September through November. The high usage may be attributed to at least two factors. First, this guide has been publicized in several ways. The guide has a direct link in a prominent location on the libraries’ homepage. Information about the new guide was also emailed to a number of faculty. Also, the guide’s Information Literacy Assessment page was mentioned at a campus training session held for departments on information literacy assessment.

More importantly perhaps, the guide responded to a direct need on the part of faculty. Using a web guides system allowed the information literacy librarian to gather the information, organize it, and make it available very quickly. The site was already up by the time departments were beginning to plan their assessment.

Conclusion and Future Goals

What the librarians at WCU Libraries see as the greatest benefit of our new online guides system is that it allows us to be more responsive to the needs of the entire campus community. Like all academic libraries, we have put a great deal of time, energy, and money into selecting great resources to help our students, faculty, and others. But with so many resources available, it is often hard to raise awareness and direct those groups to the best resources for each class or project. As Stephen Bell has pointed out, librarians want their web page to act as a portal to the information they have worked so hard to gather, but that is often not the case. Students and even faculty have great difficulty navigating through the myriad of sources available to find the best one, with the result that they often skip the library. Bell suggests that “The primary function of the contemporary academic library Web site is to connect a user to content, be it an article database, e-book or e-journal article, and to do it with minimal barriers and maximum speed and ease” (2009, para. 6). WCU Libraries’ new web guides have allowed us to sort through and repackage our resources to suit the immediate needs of a group on our campus, and do so very quickly. They support the personalization of the research process and will help us to serve the new influx of distance education students. The additional opportunities for collaboration and responsiveness have opened other windows of possibility for connecting the university community to library resources and services.
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Tracking the Elusive Student: Opportunities for Connection and Assessment

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Abstract
At Eastern Michigan University, information about library resources and services for Extended Programs (off-campus and online) students was provided in a number of online locations, and was sometimes inconsistent and difficult to manage. The library formed an internal task force to evaluate all of the library information and instructional materials provided to Extended Programs students. The task force consolidated key information in one location on the library web site and collaborated with departments within the library and around campus to provide links from the relevant online locations. This case study describes how Google Analytics was used to assess the use of the revised library web site and online instructional materials by Extended Programs students. The researchers describe examples of techniques for using Google Analytics and explain how the data collected was used to identify further enhancements to the information provided to Extended Programs students.

Background

Off-campus and online students use the same online resources and services as on-campus students for the majority of their research needs. However, they do have some unique needs. At Eastern Michigan University, off-campus and online students (known as Extended Programs students at EMU) could find information about the library in a number of online locations. The library web site included a web page for Extended Programs students, which described not only special services for these students, but also listed all library resources and services any student might use. Much of this information was repeated on other parts of the library web site.

Off-campus and online courses at EMU are organized through a unit called Extended Programs and Educational Outreach (EPEO). The EPEO web site included a collection of web pages with descriptions of library resources and services, tutorials, and frequently asked questions. The course management system for online classes, EMU-Online, included a library course visible to all students and faculty. This course also included descriptions of library services, links to resources, and additional tutorials and help documents. These separate silos of information were often maintained by different people, and it was difficult to keep all sites up-to-date with consistent information and links.

The EMU Library initiated a major revision to the library web site (http://www.emich.edu/library) during the 2008-2009 academic year. The Web Site Revision team had established a number of principles to guide the design and continued evolution of the web site, including: avoiding duplicate content and redundant descriptions of library services, using consistent branding and terminology throughout the site, and providing help at the point of need. The final web site would meet the needs of a variety of audiences, including on-campus, off-campus, and online students. The Web Site Revision team envisioned a page for Extended Programs students that focused on information about services unique to these students.

Communication and Coordination
In March 2009, a separate group – the Integrated Library Services (ILS) Task Force – was formed to evaluate the services the library provided to Extended Programs and Educational Outreach (EPEO) students and to coordinate information provided to these students. One priority of this task force was to ensure that this information and library instructional materials were presented in a clear and
consistent manner to all students. The ILS Task Force agreed with the Web Site Revision team's model of collecting information in one location, and decided that information for Extended Programs students should be organized on the library web site and not on sites that were not under the library’s control.

The integration of library resources and information for the entire campus required extensive communication and collaboration with the EPEO department from March through June 2009. The first step was to identify the unique library needs of off-campus students and the challenges they face obtaining research resources and services needed to ensure academic success. The ILS Task Force, along with EPEO’s representative to the library and their IT personnel, selected and organized crucial library information and research resources for Extended Programs students. The information fell into three major categories:

1. Service information: information on off-campus access to online resources, delivery of print materials and other materials not owned by the library, and how to get assistance when needed.

2. Resources information: basic links to finding materials on the web site (not duplicating lists of databases and resources presented elsewhere).

3. Instructional information: links to library guides and tutorials.

Next, the ILS Task Force consolidated the presentation of this information. The task force worked with EPEO to identify library information contained on two different EPEO web pages as well as the EMU-Online course management system (CMS). These links were previously created by the EPEO's library representative and were often inconsistent with the library's web site, causing miscommunication and service difficulties. The task force collaborated with EPEO, the web site revision team, and the interlibrary loan and circulation departments to describe this information in a single location on the library web site. The groups involved agreed that all web links, including those on EPEO and other web sites, would direct students to this location, avoiding duplication of content and effort. Prior to launching the site, the web revision team consulted with sample EMU students to insure that the language used was easy to understand and free from unnecessary library jargon. The revised library web site went live in August 2009, just before the beginning of the fall semester.

Google Analytics

Google Analytics is a free web analytics service. It tracks use of web sites and provides tools for analyzing this data. Web analytics are most often collected by using one or both of two main types of tools: (a) server log analyzers, which analyze the logs that are automatically collected on a web server; and (b) methods that require scripts to be added to web site, sometimes known as page tagging. Google Analytics uses page tagging; it records web site use through a JavaScript code that must be embedded in each web page or object that is tracked. Using a server log analyzer requires access to the web server logs for the server where a web site is hosted, while use of Google Analytics or similar tools only requires access to the web pages themselves in order to embed the JavaScript code.

Ledford and Tyler's *Google Analytics 2.0* (2007) provides a good introduction to web site analysis and Google Analytics, although it does not include some of Google Analytics' newer features. A few studies discuss the use of Google Analytics in library settings. Fang (2007) provides a case study example of setting up and using Google Analytics in a library web site. Kilzer (2008) demonstrates the use of Google Analytics in an OPAC, with examples of the kinds of data that can provide insights into how patrons are using the catalog. Khoo et al (2008) offer useful definitions of web metrics tools and terminology and offer insight into the use of a particular metric, session length, for analyzing the use of digital libraries. Betty (2009) describes an innovative process for using Google Analytics to track use of Flash objects, specifically Flash-based library tutorials. Breeding (2008) uses Google Analytics as an example in his discussion of the importance of the analysis of web site use data. He recommends setting benchmarks for the successful use of a site, and using empirical evidence to guide the development of library web sites.
Eastern Michigan University Library Case Study

This case study examines the use of Google Analytics to assess how EPEO students used the newly revised library web site and online instructional materials. The library web site coordinator chose Google Analytics as a web analysis tool because the library web site is hosted on a university server, and the university web department does not allow access to log files or detailed statistics on use of the site. Google Analytics could be set up and used independently by the library. Google Analytics was added to the library web site at the time that the new web site went live in late August 2009. This study examines data for the library web site that was collected from September 1 through November 30, 2009.

Adding the Google Analytics JavaScript code to the pages in a web site is a simple and quick process, particularly if the web site uses a content management system or templates. However, tracking objects other than web pages is more complex. Betty (2009) provides a detailed discussion of using Google Analytics to track use of Flash files, frequently used in library tutorials. JavaScript can't be inserted in certain other objects, such as pdf, video, and audio files. It is possible to use Google Analytics to track downloads of these files; steps required include correct placement of the Google Analytics code on the page and adding a JavaScript call to each link to the file (Google, n.d.). Similarly, outbound links to pages or files on another web site can be tracked by inserting a JavaScript call to each outbound link (Google, n.d.). The researchers used these methods to track downloads of pdf help guides and outbound links to externally hosted video tutorials.

Another drawback of Google Analytics is that analysis can only be done on data collected after the Google Analytics code has been added to a web site. Unlike a log file analyzer, it cannot analyze a preexisting log file. Due to this limitation and some inconsistencies in setting up the library's Google Analytics accounts, some components of the library web site were not tracked for the entire three month period. Tracking of pdf help guides and externally hosted videos began at the beginning of November 2009. Library research guides are hosted on a separate server from the library web site, and Google Analytics was added to these guides at the beginning of October 2009.

Once a significant amount of data had been collected in Google Analytics, the researchers needed to determine which segments of the data would provide useful information, and decide how to analyze this data. Tracking Extended Programs students’ use of a web site is not straightforward. Identifying individual Extended Programs students and examining their use of the site through Google Analytics was not possible, nor would it have been desirable for privacy reasons. Identifying these users as a group was also challenging. The researchers chose to focus on three dimensions of web analytics that could help assess use of the web site relevant to online and off-campus students: site visitors, traffic sources, and selected content.

Site Visitors

Identifying Extended Programs students among the site's visitors was complicated. A student might take only online courses, or only off-campus courses, but many enroll in some combination of on-campus, off-campus, and online courses. Identifying off-campus use of the web site is still a useful metric. Whether a student using the library web site from off-campus is enrolled an online course, or enrolled in an on-campus course and conducting research from home, at that moment, these students are likely to have similar needs.

Analyzing web use by Internet Protocol (IP) address would allow for a comparison of on-campus and off-campus use of the library web site. For privacy reasons, Google Analytics does not allow browsing of its data by IP address. It is possible to compile data that includes or excludes an IP address or IP range by setting up a filter for a particular Google Analytics profile. However, the filter must be in place before data is collected; it cannot be used retroactively on data that has already been recorded.

Because an IP filter was not created at the beginning of the time period studied, the researchers instead used Google Analytics' Advanced Segments feature to create segments based on geographic location. Unlike filters, Advanced Segments can be used on preexisting data, and they also can be applied to multiple profiles. A “Local” segment was established that included any data from Ypsilanti, the city where
Examining the data for the Non-local and Local segments provided information on overall use of the web site by these groups of visitors. From September 1 through November 30, 2009, the library web site received 153,353 total visits: 57% were Local and 43% were Non-local. Examining weekly patterns of use showed that Local traffic varied considerably during the week, with traffic on a Monday, the highest traffic day, often two or three times higher than on the Saturday of the same week. Non-local traffic was more consistent throughout the week. Non-local visits became slightly higher than Local visits on weekends. This pattern could be used to demonstrate the importance of making online research assistance available throughout the week, including weekends, in order to best serve Extended Programs students.

*Figure 1.* Web Site Visits by Day of the Week. This figure shows the weekly pattern of Non-local (off-campus) and Local (on-campus) visits to the library web site.

**Traffic Sources**

Sources of traffic to a web site show how site visitors discover or link to that site. Advanced Segments can be created to simplify analysis by particular traffic sources or a group of sources. For this segment of the web site analysis, the researchers focused on traffic from particular domains, not traffic that resulted from web searches. Traffic from two categories of sites was examined: external sites thought to be relevant to Extended Programs students, and sites that brought the highest number of visits to the library web site. The campus EPEO web site was found to be a small source of traffic to the library web site: there were 578 visits from this source from September 1 through November 30, 2009. Only 21% of these visits were Non-local. Since the EPEO web site's mission is primarily marketing of the programs, increasing the number of visitors from this source was determined to be a low priority.

EMU-Online is the course management system used by online courses and by some hybrid courses (on-campus courses with an online component). There were 596 visits to the library web site from EMU-Online from September 1 through November 30, 2009. This source also directed some traffic to the library research guides: 290 visits from October 1 through November 30, 2009. This represents less than
1% of all library web site traffic, and 3.5% of traffic to library research guides. The number of visits was most likely affected by the ongoing updating of the library course in EMU-Online throughout the Fall 2009 semester. Only a few links to the library were visible on the EMU-Online home page for most of the semester. Currently, links to the library are not automatically included in the standard course shell. Working with the Extended Programs office to make a library link an opt-out feature rather than a link that must be added by course faculty would likely help students to connect to the library from EMU-Online. While EMU-Online was not one of the largest sources of traffic to the library web site, 76% of the visits from EMU-Online were Non-local, indicating that the library links were of more interest to off-campus users of this site. EMU-Online has the potential to provide an important link library resources and services for Extended Programs students.

The researchers found that a significant source of traffic to the library web site was my.emich, Eastern Michigan University’s campus portal. My.emich was the source of 17% of all visits to the library web site, and 55% of these visits were Non-local. Basic links to the library web site appear to be easy to find on my.emich. Learning that this is such a significant source of traffic to the library web site indicates that efforts to enhance the library’s presence on this site could help guide Extended Programs students to library resources and services.

![Figure 2](image-url)

**Figure 2.** Non-local and Local Web Site Visits by Source. This figure shows the proportion of Non-local (off-campus) and Local (on-campus) visits from all traffic sources and selected sources relevant to Extended Programs.

**Selected Content**

The third dimension examined was selected content relevant to Extended Programs students. Analytics for any library web site content could be examined using the Non-local and Local segments. There were no significant differences in the content most frequently viewed by Local and Non-local visitors. For both groups, the web site home page accounted for about 54% of all page views. The library databases were the next most frequently viewed pages, at about 28% of all page views. Generally, pages categorized under “Help” on the library web site (guides and instruction) received similar use from Local and Non-local visitors. Exceptions were the research guides and pdf guides to databases. These received proportionally more Non-local than Local use. By contrast, links to externally hosted videos instead showed less Non-local use and more Local use.

Information on the library web site specifically for Extended Programs students is contained on
two pages: “Extended Programs Services” which provides an overview of all services, and “Delivery of Library Materials” which details the procedures for requesting home delivery. Analytics showed 71% of all views of these pages resulted in the viewer staying on the library web site to go to another page, perhaps an indication that links to library information presented here were useful. These pages were viewed a total of 630 times from September 1 – November 30, 2009; only 21% of these views were Non-local. The total number of page views, and the low level of Non-local use, indicate that more effort should be made to direct Extended Programs students to this information. Steps that could be taken within the library could include creating a direct link from the home page, and increasing the visibility of links from other pages about library services. Communication with EPEO staff about adding library links as a default on course shells on EMU-Online would be another important step.

Library web site content that has a higher than average proportion of Non-local use may indicate that this content is easier for Extended Programs students to find on their own. Research guides and databases guides, which exhibit more Non-local use, are linked at point-of-need locations, such as the database list and the home page of the web site. Video tutorials have a low percentage of Non-local use. Most of these video tutorials are not currently linked at point-of-need, but are collected on a single web page. Linking video tutorials from point-of-need locations whenever possible could help direct Extended Programs students to these instructional tools.

Figure 3. Non-local and Local Page Views of Web Site Content. This figure shows the proportion of Non-local (off-campus) and Local (on-campus) page views of selected web site content relevant to Extended Programs students.

For certain content, other analytics tools can provide a useful complement to Google Analytics. For example, the use of library tutorial videos hosted on YouTube was evaluated more thoroughly by using YouTube’s Insights feature. Overall, the researchers found that Google Analytics presents numerous opportunities for analysis of the use of library web site content. Advanced Segments provides a powerful tool for analyzing content by any categories relevant to a particular need, such as categories of site visitors, sources of traffic, or search keywords used to find the content.

Conclusion

Through extensive communication and collaboration with the Extended Programs and Educational Outreach (EPEO) department, the library’s ILS Task Force was able to identify Extended Program students’ unique needs and consolidate this information on the library web site. Consolidating the
information allowed for current, accurate, and consistent information and by extension, improved service to library users. Departments across campus are now able to link students to this web page from any online location.

Google Analytics provided estimates of the use of the revised web site by Extended Program students. It showed that in general, their use of the site was very similar to that of on-campus students. Tracking these elusive off-campus and online students and identifying areas where their use of the web site differed from other students allowed the researchers to identify possible improvements to the site. These included adding more point-of-need links to library instructional materials and making links to the information for Extended Programs students more prominent. Information gathered showed a low use of the library web site from the EMU-Online course management system. This data could be brought to the attention of the EPEO department to emphasize the need for default links to the library in individual course shells. Google Analytics also alerted the researchers to the significance of the my.emich campus portal as a source of off-campus use of the library web site. The departments that coordinate information on this portal should be targeted as future collaboration partners.

This case study demonstrated the importance of assessing use of the library web site, and the necessity of connecting with other campus departments that support Extended Programs students. Future efforts to assess use of library resources and services by these students could include conducting a usability study, adding a qualitative component to the data provided by Google Analytics.
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Matching Up Learning Styles with Learning Objects: What's Effective?

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Abstract
Online instruction is quite prevalent on campuses and within libraries. Librarians are engaged in the creation of learning objects that can either be linked to or embedded within course management systems. Yet, are those instructional tools designed to best accommodate diverse learners or are they constructed to reflect the teaching and learning style of the designer? Results from a study (a survey to librarians, student usability studies, and interviews) document both considerations made in the creation of learning objects, and the effectiveness of learning objects from students’ perspectives. The findings may be useful for future modifications of these tools (such as tutorials, videos, podcasts, and PowerPoints).

Introduction
Educators and librarians aiming to create tutorials or online tools must first understand the diverse learning needs of students. Some students seem to thrive in the online environment, while others feel at a loss. Research on learning style preferences in the online environment emphasizes the need to provide a variety of methods that include text, aural, visual and kinesthetic modalities. Although the literature includes examples of suggestions and modifications for accommodating different learners and cultural groups in the online environment, there is little research that documents the evaluation of learning objects to ascertain if their design is in alignment with the needs of different learners. In this study, students from underrepresented ethnic groups were solicited in order to explore whether or not there might be similarities in learning styles. It is important to design these objects in the most culturally responsive and pedagogically sound manner as possible. Some educators and librarians are becoming aware of the importance of addressing the notions of multiculturality and interculturality in the design of online courses and tools, but this invokes the following questions: What are the characteristics of an online course, tutorial, or tool that is inclusive of all types of diversity, and what are the guiding principles for designing them? Do the designers take into account the various learning and cognitive styles that should be addressed? How do the challenges of intercultural communication in an online environment affect online teaching and learning (or in chat reference interactions)? What are the instructional design models that are culturally inclusive? These questions were posed in a study that collected data using a survey to librarians and usability interviews with students.

Literature Review

Learning Objects
A broad definition of a learning object is that it is a resource, usually digital and web-based, that can be used and re-used to support learning. Wiley (2000) mentions that “Instructional designers can build small (relative to the size of an entire course) instructional components that can be reused a number of times in different learning contexts” (p. 3). Some common examples of learning objects are online modules, tutorials, games, blogs, research guides, narrated PowerPoints, podcasts, photos, images, cartoons, diagrams, quizzes, surveys, and videos. Educators create and use learning objects to varying degrees. There is no single, standard learning object structure. Learning objects are used in order to enhance and enrich students’ learning experiences. They can provide an engaging learning environment for students “to learn in as opposed to one to learn from and can scaffold student learning” (Keown, 2007, p. 77). Learning objects range from animation and video segments all the way to complete modules or lessons.
Core characteristics of learning objects are efficiency (i.e. cost and time savings), reusability, interoperability, durability, and accessibility (Keown, 2007; Mardis & Ury, 2008). Other features are considered to be facilitation of competency-based learning, increased value of content (Longmire, 2000), and customization (Holmes, 2003; Longmire, 2000). Learning objects could be course-based but also remedial, facilitating “a just-in-case, just-in-time, just-for-you approach” (Holmes, 2003).

**Evaluation of Learning Objects**

Although there are many types of learning objects, screencasts are increasingly being used by many libraries to create learning objects. The study described in this paper also used a screencast as one of the learning objects that students evaluated. A screencast is generally referred to as the method for using software such as Camtasia, Captivate, Jing, Wink, or CamStudio to select and capture anything on a screen (a series of click-throughs on a web page, PowerPoint, video and then to add text, call outs, captions, audio and voiceover narration, quizzes, and hotspots to link out to other material). The screen can then be sent to a file, or instant messaged, e-mailed, published in a Flash format, or saved in quick time format, podcast, and other formats. For example, librarians can create a tutorial on searching a database from start to finish, record the process, save the file, and have students play it using any common browser plug-in like Flash or Windows Media Player.

Evaluation of screencasts tends to focus on best practices, such as using scripts to provide structure and clarity to online tutorials (Bailin & Pena, 2007). Much of the work of creating a screencast or other tutorial occurs in the planning and content development of the script. Other common suggestions include creating small chunks of content rather than one lengthy tutorial. Betty (2008) found that shorter tutorials (one for each topic, service, or feature) were more likely to be viewed in their entirety than were longer ones.

Tempelman-Kluit (2006) emphasized the value of technologies such as screencasts because they allow an interaction with the media and use multiple sensory perceptions (typically visual, auditory, and kinesthetic). Prior to screencasts many librarians developed online tutorials which may be a series of static web pages. The efficacy of those tutorials has been evaluated by many including Michel (2001), Nichols, Scaffer, and Shockey (2003), Bury and Oud (2005), and Betty, (2008).

**Pedagogical Considerations**

Regardless of the format of a tutorial or learning object, effective pedagogies should be considered along with the content, design and technology used (Lindsay, Cummings, Johnson, & Scales, 2006; Lechner, 2005). In a study by the Online Learning Research Committee of the Educational and Social Sciences section of American College and Research Libraries, results from a survey (Mestre et al., 2010 under review) with 92 librarians engaged in online learning and/or creation of learning objects indicate that librarians had very little training in pedagogy or learning styles. Results suggest that when designing learning objects, librarians are generally not aware of best practices or of how to design pedagogically sound projects. Only 28% had previous coursework or a degree related to teaching. 68% indicated that in order to learn how to develop a new tool or learning object, they had to figure it out on their own. This is relevant in that it may mean that librarians possess little knowledge about the importance of methods for adapting a learning object to be effective with learners having different learning styles.

**Learning Styles and Diverse Populations: Online Learning**

There are many models for learning styles and some have looked at patterns for diverse populations in the online environment (Mestre, 2006). Studies over the past couple of decades have used some of the well known learning theory models, such as Kolb’s (1984) and Witkin, Moore, Goodenough, and Cox’s (1977), and tested users in the online environment to see if their preferences remain similar in the online arena. Kolb’s learning style inventory (1985) separates learners into four areas according to a four stage cycle:
1) Concrete Experience - Learning begins through direct experience.
2) Reflective Observation - The learner reflects on what occurred during a particular experience and how that relates to the learners’ past experience.
3) Abstract Conceptualization - The learner develops a deeper understanding of the significance of what occurred during the experience.
4) Active Experimentation - New insights are then tested which results in a concrete experience.

These four areas can also be represented in Figure 1, which includes learning preferences of various cultural/ethnic/gender groups. Based on findings from learning style preferences for diverse groups as well as information from the current study, the author has added those groups to the categories below (Mestre, 2006).

![Figure 1. Kolb’s Learning Style Model.](image)

Of the four learning styles described by Kolb (1985), Accommodators seem to be the most at risk in online learning environments. Researchers are finding that Accommodators were the least likely to succeed in an online learning environment that is abstract and reflective (Simpson & Du, 2004; Holmes & Brown, 2000; Rourke & Lysynchuk, 2000).

Honey and Mumford (2004) developed a modified version of Kolb’s learning style inventory, which turns the Converger, Diverger, Assimilator, and Accommodator styles into Activists, Reflectors, Theorists, and Pragmatists. Of the four types, Reflectors and Theorists tend to do best in online environments, partly because an online environment might provide them more time to think about their tasks.

Native Americans and Latinos tend to enjoy learning in a cooperative setting where they can interact with peers. European Americans prefer to learn on a more individual level. African Americans tend to be kinaesthetic learners and are comfortable with minimally structured learning experiences. Conversely, Asian Americans are generally known to enjoy more structured activities and time to reflect.

The Index of Learning Style Inventory from North Carolina State University (NCSU) provides similar categories of learners (with slightly different terms) and examples of activities one might include to accommodate those learners. The categorization is: Active/Reflective Learners, Sensing/Intuitive

The examples below were chosen from those on the websites because they speak to many elements one should also consider when designing learning objects for various learning styles. The author has taken the liberty to suggest the ethnic and cultural groups that, according to past research, may fit into those learner styles.

**Active/Reflective Learners**

- Active learners (including Latinos, African Americans, and Native Americans) tend to retain and understand information best by doing something active with it--discussing or applying it or explaining it to others. "Let's try it out and see how it works" is an active learner's phrase. They also tend to like group work more than reflective learners. Sitting through lectures without getting to do anything physical other than taking notes is hard for most learning types, but particularly hard for active learners.
- Reflective learners (including Asian Americans) prefer to think about the material quietly first. "Let's think it through first" is the reflective learner's response. They tend to prefer working alone.

**Sensing/Intuitive Learners**

- Sensing learners tend to like learning facts, whereas intuitive learners often prefer discovering possibilities and relationships. These learners often like solving problems by well-established methods and dislike complications and surprises. Sensors don't like courses that have no apparent connection to the real world.
- Intuitive learners like innovation and dislike repetition. Intuiters don't like "plug-and-chug" courses that involve a lot of memorization and routine calculations.

**Visual/Verbal Learners**

- Visual learners remember best what they see pictures, diagrams, flow charts, time lines, films, and demonstrations.
- Verbal learners get more out of words, both written and spoken explanations.

**Sequential/Global Learners**

- Sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one, and to follow logical stepwise paths in finding solutions.
- Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly "getting it." These students may be able to solve complex problems quickly or put things together in novel ways once they have grasped the big picture, but they may have difficulty explaining how they did it.

Another learning style questionnaire (VARK) provides users with a profile of their learning preferences. These preferences reflect the ways that they want to receive and give information. The VARK questionnaire assesses a student’s learning style based on four styles: Aural, Visual, Read/Write, and Kinesthetic. The database for January-March 2007 shows that for those under 18 years of age there were 36.2% with a single preference and 63.8% with some form of multimodality. For those aged 55+ there were 43.2% with a single preference and 56.8% who had multimodal preferences. With age, the proportion with a Read/Write single preference increases as the proportion with a Kinesthetic single preference decreases. Visual decreases from 3.6% to 2.9% and aural decreases from 9% (0-18 year olds) to 6.6% (55+ year olds). For under 18-year-olds those with a single preference kinesthetic profile are 13.6% of their total and those with single preference read/write make up 9.8%. For those aged 55+ the proportions are 11.1% and 22.6%. Some have suggested that this merely reflects the way that the older age group was taught (Fleming 2001-
What is the benefit of knowing about learning styles? Understanding how students learn is beneficial in several ways. It can help educators and librarians to know their students, help them to understand how they take in and interact with information. If students are aware of their learning style they can better communicate what they need in order to process the information. Awareness of learning styles can also help educators to be more flexible in the ways they present information and design courses and learning objects.

**Application to Tutorials**

Betty (2008) described efforts to standardize several tutorials in order to make them intuitive to users. He concluded that using consistent features, such as standardized language and color schemes, may help minimize confusion among end-users, specifically in sections that prompted user interaction. The tutorials also used common introductions and endings and short 10–15-second video clip introductions featuring members of the library faculty. Close captioning of audio and slide notes were also used in order to increase accessibility.

Watson (2004) provides examples of the benefits of combining audio and visual components into tutorials. In addition to step-by-step instructions (great for sequential learners due to the chunking of information), he explains that voice narration provides positive feedback through communication cues in the narration. The step-by-step instructions and the narration help reduce cognitive load as students are guided through the information. He concludes that students are able to learn better with the combined visual and audio components.

Costello, Lenholt, and Stryker (2004) offer an example of the value of differentiating instruction within the online environment to address the specific learning styles of students from the X and Y Generations. Generational learning styles can sharply define the methods for delivering instruction. For the Net generation, these preferences include instruction focused on short, concise, practical bits of information, a tendency to rely on familiar resources, a predilection towards active, kinesthetic learning utilizing innovative technology, an excessive reliance on Internet resources when conducting research, and an expectation for educational experiences to be individualized through personal contact and feedback from instructors.

**Methodology**

Quantitative and qualitative methods were used in this study. Quantitative methods were useful for compiling similarities or discrepancies related to various patterns. Surveys were analyzed using SPSS software which allowed for correlations and running of Chi-square and Cramer Tests using Anova analysis. The qualitative responses, such as the open responses on the survey and the student feedback from the usability studies, provided invaluable insight into the reasons and decisions about process or choice that are not normally provided in quantitative studies. For this study, the voices of students were invaluable for learning how and why students chose various paths in their research process.

**Survey**

In the summer of 2009, a survey was distributed to various library online discussion groups that had a focus on instruction, information literacy, or online learning. The questions were geared to find out considerations that librarians make when designing learning objects as well as their knowledge of learning styles. There were 120 responses, with 98% of the respondents indicating they were academic librarians. There were eight questions related to design considerations, six questions specifically about learning style considerations, and four questions related to assessment of the learning objects. Sixteen of the eighteen questions were multiple-choice, and each contained an option to choose “Other” and add additional information.
Student Usability Interviews

In response to a solicitation to various cultural houses and student e-mail lists on campus, ten initial students provided feedback on three tutorials to assess the efficacy of various learning objects. Students received a $15.00 gift card in exchange for an hour of their time. The steps during the interviews are outlined below.

Step 1: Student Learning Style Inventories. At the beginning of each interview each participant took two short learning style inventories. Each took about five minutes. These were the VARK Questionnaire and the NCSU Index of Learning Style Inventory. Both inventories were used in order to evaluate the student’s learning style.

Step 2: Usability Interviews with Students. Students then worked through an “ERIC” tutorial designed as a static web page with screen shots and an “Online Research Resources” tutorial produced with Camtasia. Camtasia is software that allows for inclusion of animation, voice, captioning, and testing functions. Camtasia allows users to select and capture anything on a screen, such as the process of going through a database search (with or without voice), and then to add text, captions, voice overs, and other effects. It allows for the final product to be viewed in multiple ways, including quicktime, flash, and mp4 (for podcasts). These are often described as videos because the movement is fluid. All students then worked through a tutorial about plagiarism that was more interactive. For this study, it was useful to have the mouse movements recorded, along with the student’s voice, in order to go back and analyze various aspects of their search behavior. Figure 2 provides a visual image of the process.

<table>
<thead>
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| Tutorial 1 | ERIC Tutorial (Static web page with screen shots) (~3 minutes)  
  - Pre-test Scenario - find articles in the ERIC database about the “impact of television violence on children” |
| Tutorial 2 | Online Research Resources (Camtasia Version) (2.04 minutes)  
  - Pre-test Scenario - find articles in a general database about sports and drugs at the college level |
| Tutorial 3 | Plagiarism Tutorial – Interactive (~ 3 minutes) |

Figure 2. Process for Usability Test

Starting from the library’s home page (http://www.library.illinois.edu), students were first given a pre-test scenario task to show how they would find articles on a specific topic. See the figure above for the topics. The participants were asked, wherever possible, to demonstrate any information seeking behaviors they choose to describe on a provided networked computer with Camtasia software. The program recorded their mouse movements and voice activity. After the pretest each student was asked questions to assess his/her prior knowledge of ERIC or Online Research Resources. They then went through their designated tutorial and after finishing they were asked a series of questions to get feedback about the tutorial, and to discuss elements that were helpful or not helpful. They were also asked for that would help make the
tutorials more aligned to their learning preference.

As a post-test they were asked to find the same information that they were asked to find in the pre-test (i.e. find articles on a specific topic). Again, their movements and voices were recorded using Camtasia. Finally, they were shown an interactive tutorial about plagiarism. They were recorded as they went through this tutorial, providing feedback as they progressed.

Results of Survey: Designing for Multiple Modalities

Students have different ways they take in and process information. Although there were 18 questions asked in the survey, this article will discuss only four of them due to their relevance to learning styles and tutorial design:

- Question 9: Do you provide options for students to learn through multiple modalities (auditory, visual, kinesthetic)?
- Question 10: Do you use simulations or interactive features (or games) for tactile learners?
- Question 13: Do you plan your tutorial so that a user can pick and choose what to do next?
- Question 18: Have you had any training in learning styles?

Question 9: Do you provide options for students to learn through multiple modalities (auditory, visual, kinesthetic)?

Figure 3 indicates which modalities were taken into consideration during the designing of learning objects, whether visual, text, auditory, or kinesthetic. Rather than just a lecture or text-based lesson, were the learning objects created for multiple intake modes? A little more than a quarter (28%) responded that they did design them for all three modes, although not consistently. Comments by these respondents indicated that it depends on the purpose of the tutorial and that many of the tutorials are mainly visual and text.

![Figure 3. Question 9: Do you provide options for students to learn through multiple modalities (auditory, visual, kinesthetic)?](image-url)
Though the majority of librarians choose only one approach to their learning style considerations, one-fifth of the respondents claim that they use multiple approaches in tutorial design. The largest response was for visual and audio (narrating screens) such as with Camtasia and Captivate. Cross tabulation of the two variables (learning modality considerations and the use of simulation/interactive features for tactile learners) show that tutorials that include opportunities for all learning modalities are more likely to include simulation/interactive features for tactile learners.

**Question 13:** Do you plan your tutorial so that a user can pick and choose what to do next?

Student learning preferences vary in whether they prefer sequential, linear, or random progression of information. Figure 4 shows results for whether or not the tutorials were designed to be sequential. From this study 61% said that their tutorials are not planned to allow the user to pick and choose their path. Another 15.3% said it varies. The majority of the tutorials available to students have them progressing through in a sequential manner rather than creating the ability to choose paths.

![Figure 4](image)

*Figure 4.* Do you plan your tutorial so that a user can pick and choose what to do next?

**Question 10:** Do you use simulations or interactive features (or games) for tactile learners?

Furthermore, only 6% of the respondents said they included interactive features in each tutorial. Over half of the respondents (53%) did not include any interactivity or active learning. In other words, more than half of the respondents create tutorials geared for passive learning (See Figure 5).
Question 18: Have you had any training in learning styles?

After all the effort to create learning objects that can be embedded in courseware or elsewhere on the web, how do educators know if these objects are actually helping or if they are designed in a way to be helpful? When asked about training in learning styles, participants indicated they had some knowledge (through a workshop or reading), but less than one-quarter of the respondents had participated in formal coursework.

Several respondents commented that, in order for a learning object to be pedagogically effective, it must include multiple instructional options specifically designed to accommodate various learning styles, in order to promote learning for all students. Some remarked that pedagogically sound instruction includes providing multiple instructional options for varying learning styles regardless of the instructional format.

By exploring further into learning styles it is possible not only to understand what students prefer in the in the way of learning—but how to design learning objects to accommodate those preferences. There are many ways that students learn and depending upon situations, those may vary. Often, educators design their learning tools to fit the style of learning that they are used to, what is easiest, or even what is available.

More than three-quarters (80%) of the respondents indicated they used screencasts to create their learning objects. Screencasts can be limiting if it does not include interactivity. Only six percent of the respondents indicated that they develop their learning objects to accommodate all modalities (auditory, text, visual, and kinesthetic). If the tool is limiting, then it becomes important to augment that information with other exercises outside of the tool.

**Results of Student Usability Interviews**

**Participants**

This first phase of student usability included ten students. Eight students were juniors and two were seniors with majors ranging from Fine Arts to Environmental Science. Eight students identified as Hispanic, and two as Asian. Eight students were bilingual in Spanish and English and two in Spanish and Chinese.
Matching the Results with Learning Styles

Once students finished their usability study, their pre- and post- tests results were compiled and matched to their learning style to determine if any patterns emerged.

**VARK assessment** -- All but one of the students was rated as multimodal learners according to the VARK assessment. That assessment indicates that they scored high in more than one mode, such as high in visual and high in kinesthetic. During the interviews, many commented that it depended on the material for whether or not they wanted the instructions in front of them, if they preferred the information be verbal, or if they wanted to work alongside the information. By having various modes they could then focus on what was useful for them at the time. Some students wanted to just skim the text or image and quickly get to the task at hand, while others wanted to look at the visuals and refer to the text when needed. Others wanted to sit back and listen to the speaker while viewing the example.

**Ability to Recreate the Steps** -- Eight out of the ten students, after watching the Camtasia tutorial, were not able to go directly to the library web page and recreate a search. Only two students were able to reproduce the steps that had been presented in the tutorial. Even then, they only got part of the way through the steps. On the other hand, all of the students were able to reproduce the steps to find articles after viewing the static web page with screen captures. Eight students opened a new browser window as they went along with the tutorial and did the steps while referring back to the tutorial. These students took between three and six minutes to complete the tutorial. Two students skinned through the tutorial (in less than one minute) without opening a new browser window to work with the tutorial. Neither one was able to even get beyond the opening web page. One of the students eventually went back to the tutorial to read what she was supposed to do and was able to get part of the way into the exercise, but did not refer back to the page after she got into the desired database.

**Static Web Page with Screen Shots** -- As mentioned above, those who used the static web page with screen shots and a directive to open a new web browser and do the search along with the steps on the web page were all able to go back and recreate the search. Most of them referred back to the tutorial from time to time. When asked whether they focused on the visuals or the text, all of them said they looked at the visual first and then only looked at the text if they needed some clarification. Two students mentioned that they wish the text would have been embedded within the image so that they wouldn’t have to look in two different places to understand the image. One student said the text was not necessary. Of interest is the fact that her VARK score was Visual 1, Read/Write 7, which indicates that the student normally prefers reading over images.

**Camtasia Tutorials** -- After completing the Camtasia tutorial, most of the students felt it was a well-done and clear tutorial, though they had difficulty during the post-test when asked to find the relevant information (even though they were told prior to the tutorial what they would need to look for after the tutorial). They felt that some of the information on the tutorial was overwhelming. They wanted to read the text, listen, and look at the images all at the same time. When asked what elements they focused on in the tutorial, 90% said they listened and watched the main tutorial. All the students felt that the most useful feature was the periodic pop-ups that highlighted specific steps or information. They diverted their focus to that box because they felt that was important information since it “popped up”. One student, who scored low on a Read/Write learning preference, said that when the pop-ups appeared she had to stop listening to the audio in order to focus on the content in the pop-up. No one mentioned being distracted by the close captioning (and did not even ask if it could be turned off). Only one student looked at the captioning at the bottom of the screen; this student scored high in Read/Write preference.

As indicated above, it was more difficult for students to go back and recreate the search after watching the Camtasia tutorials than it was when using the static tutorial. Five students were able to get part of the way through to find the required database, but it was by using a method other than what had been described in the tutorial. They had a better understanding that they should look for a particular database, but couldn’t figure out how to get to that database. For those that did get to the database, all but one remembered to change the keyword option to descriptor and to add terms on separate lines. When
asked what could have improved the tutorial, most indicated that they would have preferred to have some
information and then “try it out”, although one student (high Visual learner) enjoyed being able to sit back
and watch the video. He was able to recreate most of the steps. They also felt that having chapter markers
on the side so they could jump back and forth would have been useful.

Plagiarism Interactive Tutorial -- Almost all the students preferred the tutorial that not only had animation
but allowed them to choose a character and had a scenario that was relevant to their day-to-day
experiences. They said that being presented with some information and then being asked immediately to
respond to something or to choose an option made them pay attention to what was being said because they
knew they would have to apply the information. They also said that the humor in the animation kept them
engaged, along with occasional sound effects. All but one did not miss the voice narration. That student
scored high in Aural learning style and commented that the tutorial with the voice narration helped her to
remember better what to do (although she couldn’t recreate the steps). She had scored very low in
Kinesthetic learning style, yet enjoyed the ability to “help out a student” and chose the student interested in
science, since that was her field. She did like choosing answers.

Comments From Students

Eighty percent of the students preferred the static tutorial with the screen shots and the ability to
do the search along with the tutorial. One student commented that this type of tutorial was especially useful
if you need to learn how to do something.

All of the students felt the Camtasia tutorial was useful to explain something and all commented
that it was just right and had no recommendations. However, they did not like that they had to watch the
tutorial all the way through before practicing something. They mentioned that they would envision wanting
to refer back to the tutorial to check on something and probably wouldn’t do it if they had to watch it to
find the relevant part. When asked if they would do that if there were chapter markers on the side so they
could pick and choose, they said that those markers would be very helpful.

Most of the students (90%) liked the plagiarism interactive tutorial due to the expectation that they
would need to respond to something during the course of the instructor. However, four students
commented that it was a little confusing because there were images on one side and text on another and
they weren’t clear if the picture had any relationship to the text. Eight of the students tried clicking in
different places on the images, thinking they could go to the next screen or that something would happen.
After a few screens they understood that the image was just there to appeal to their visual side so they
learned to not pay attention to it. They did like the interaction.

Discussion

For the study, there were three guiding objectives:

- To assess what considerations librarians and educators make when designing tutorials (e.g.
  learning styles, communication styles, modes of presentations) and if they consciously consider
  the differing needs of diverse students. Do the designers take into account the various learning and
  cognitive styles that should be addressed?
- To gauge design considerations for the design of learning objects and tutorials as well as to assess
  educators training in pedagogy and learning styles.
- To provide information to assist librarians/faculty as they develop online instruction for students
  from diverse cultures, including features that best optimize learning based on the students’
  learning styles.

Based on the student interviews, the pattern for most users was that they have strong tendencies in
multimodal learning. What does that mean for educators? Multimodal learners and teachers can be more
flexible about how they take in and give out information than those with a profile that emphasizes a single
preference. They tend to be able to match their preferences with whatever mode(s) are being used. But because multimodal learners need to have at least two, and sometimes three or four modes involved in learning before they are satisfied, that may be a disadvantage. For example, someone with an active and reflective profile would want to read and talk about incoming information with others before they would "trust" the information. A single preference learner should "get it" from just their preferred mode, if it were available in that form.

Based on the literature and results from this study, students want a variety of tools that engage, multiple paths to information, and interactive opportunities. Yet, this is not what is being produced.

- 63% of survey respondents did not provide tools for multiple modalities. Most of the tutorials were developed from a logical, text-based, passive environment, whereas most of the students did not find that was their preferred style.
- Students want multiple paths to information, yet 72% of the survey respondents do not provide for multiple paths.
- Students want interactive opportunities, yet 52% of the survey respondents do not provide these and only 6% provided them in every tutorial.

**Suggestions**

Below are some questions that might be asked when creating learning objects to help think about the learner.

*Are there scenarios that require students to think about and relate to their real world experience?* The plagiarism tutorial used in this study included four characters who were facing a real life scenario. Students needed to choose one with whom they might identify and help that student through the process. All but one of the students in this pilot study identified as Hispanic. They commented about the importance of finding relevance in tutorials and working together to help someone solve a task. They remarked that having a task to work through that was applicable to them helped them to engage the information that was presented. They felt empathy for the character when the wrong response sent the character to a fire pit. Some of the students chose the Hispanic-looking character, some chose the character closest to their own area of study, and one chose the character because of the color of the clothes and because there was a cat. However, one student (identified as Asian) did not see why she had to choose a character because she did not see how it would help her learn the information.

*Are the learning objects organized sequentially where the user must proceed one step at a time or is there a way for students to choose sections?* If students are using a learning object for something other than a one-shot experience, they may need to refer back to it as they go through the actual process. All but one of the students in the study needed to refer back to the tutorial for guidance. The Camtasia tutorial was problematic in that there were no chapter markers to let students jump to a particular section. None of the students attempted to consult the Camtasia tutorial, whereas all but one student did refer back to the static web page with screen captures to remind them of the process. The more recent versions of screen cast software do allow for marker chapters so it is possible to provide an index on the left for students to jump to various sections.

*Does the learning object have sound design principles based on multimedia learning?* Although all but two students in this study scored in the upper regions for at least two learning styles, they all commented that the most effective tutorial or learning object would be one that had visuals that flowed along with a voice narration. They wanted to see text represented within the image or in a pop-up that appeared from time to time to highlight a particular point. They mentioned that students are in a hurry so they don’t want to waste time reading a lot of information. They want to glance at it quickly and get to the task at hand. The visuals that included arrows, highlights, or that drew the attention to a particular aspect were especially effective. During the post-test, students would verbally recall a particular feature that had been highlighted in the image or in a pop-up. Only one student read the captioning at the bottom of the Camtasia tutorial. In the static tutorials with screen shots none of the students read the text unless the image wasn’t adequately clear. Even if a student normally has a preferred learning style, that doesn’t necessarily mean that information has
to be geared to just that format. When there are multiple styles represented, a student can focus on their preferred style (visual or aural) and use the other cues to supplement the information. Or, he can choose to ignore the other modes.

Interactivity was equally important. Students who were able to recreate the steps and find articles were the ones who had done the search alongside the static tutorial. After interacting with the plagiarism tutorial, students indicated that being able to choose options helped them focus on the task at hand. Even though they had many suggestions for improving the interactivity of the tutorial, they did like the “game-like” quality and knowing that there might be consequences if they chose the wrong response. In the online environment educators have the opportunity to design materials that can engage students’ visual, aural, and critical thinking abilities. As found in this pilot study and as measured by the VARK learning style questionnaire, most students in this study were multimodal learners, so providing ways to accommodate many styles should help them to be successful. What seems to be missing in the online environment (as compared to the face-to-face) is the ability for a hands-on component, so educators should think of ways to intersperse active learning into their objects in order to help students learn the intended information.

Important elements also included getting feedback after choosing a response and engaging the mind (using critical thinking) rather than just passively viewing a video object. Learning objects that require the user to be interactive, either by rolling a mouse over an object to gain further information, choosing a response, or dragging and dropping, engage the mind. Students in this study were able to repeat steps from the tutorial when there had been interactivity during the tutorial process.

Can the student choose the learning style she or he prefers? Various tutorials do allow students to choose whether or not they prefer to view a static tutorial with screen shots, a video tutorial, or a learning object with sound or with captions. A study to ascertain which mode students choose (matching their learning style) would be illustrative. Would students choose something like a Camtasia tutorial because they might think it would be more enjoyable, even though their learning style might be more closely matched to a static tutorial where they need to work along the side of the tutorial? Because libraries know they also need to provide captioning or a script along with their visual and auditory learning objects, there is great flexibility for the learner to choose a format that best compliments their learning style. When designing screencast learning objects it might be good design practice to ascertain that a learner could get equal information if they listened, or read, or just visually say the information. If not, then alternate versions should be made available. In this study, the Camtasia tutorial provided inputs for the Aural, Read/Write, and Visual styles. Students varied in what they focused on, but because the tutorials had been designed to convey the relevant information whether looking, listening, or reading, students were equally able to explain what they needed to do. The difficulty, however, was that there was no interactivity built into the tutorial so actually going back to recreate the task was problematic. Integrating interactivity within learning objects appears to be the element that is missing in many tutorials. Adding a quiz “check-in” question periodically in the tutorial may help with the retention of information.

Limitations and Next Steps

There are several limitations of this study. One is the small number of students who participated in the study. One of the questions to consider is at what point are there adequate number of participants to provide the information needed? Future directions include adding ten more students to the usability study in order to provide a broader base of learning style designations and to further assess whether particular learning preferences correlate with results of the various types of tutorials.

Another limitation is the distribution of ethnicity in the study. It was hoped that there would be representations from all ethnicities in this study in order to explore if any patterns exist related to learning styles and culture or ethnicity as students use learning objects. All but two of the first ten participants identified as Hispanic. These students contacted the researcher as a result of the flyer that was sent by faculty members. Although similar efforts were made to disseminate flyers to all the cultural houses and to instructors of courses which typically enroll students from various ethnicities, further strategies may need to be used in the next recruitment phase, such as individual invitations and students inviting other students.
It is not known if a broader sampling will yield any new information pertaining to learning styles of students from diverse cultures or if the majority will also test as multimodal. Yet, it would be useful to conduct a study that includes equal distribution of Hispanic Americans, Asian Americans, African Americans, Native Americans, and European Americans.

**Conclusion**

The results of the study indicate that students recommend the use of multiple modalities in the design of learning objects. They prefer that the learning objects include both images and sound, are visually engaging, and are available at point-of-need, with some way to pick and choose sections to review. In previous student usability studies, students did better on the post tests when they had something active to do in the tutorial. However, it appears that many classes are still mainly verbal.

There is a need for librarians to know how to create learning objects in a pedagogically sound way, including evidence of what is good pedagogy in the online environment, ways to engage students, and ways to design these objects to match student learning styles. Librarians in the surveys had little knowledge about the impact of learning objects on student learning. To that end, respondents indicated a desire to pursue professional development opportunities to provide librarians with a sound background in the technology (hardware, software, course management systems, etc.) and pedagogy associated with the design, development, and implementation of learning objects as a means of delivering instruction in an online environment. Ozcelik, Arslan-Ari & Cagiltay (2010), Moreno & Mayer (2007), Dutke & Rinck (2006), and Mayer & Moreno (2002) all provide good information related to multimedia learning principles.

Several librarians were at a level where they were ready to make more elaborate learning objects, including incorporating interactivity, games, puzzles, and quizzes but didn’t know where to turn for guidance. Another area of need was to learn more about how to embed learning objects in course management systems. The need for a checklist and examples of best practices, and for learning object repositories, was noted by many respondents. It is also clear that learning styles need to be considered in order to make a learning object pedagogically sound. Just as in a classroom, online objects need to include options for all learning styles to help students learn in their preferred style. Students in an online environment take advantage of several learning styles. Even though it is important to design learning objects for multiple modalities, Aragon (2002) concluded that “students learn equally well regardless of learning style, provided that the course is developed around adult learning theory and sound instructional design methodologies” (p. 227).
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Library-Led Faculty Workshops: Helping Distance Educators Meet Information Literacy Goals in the Online Classroom

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Abstract
At University of Maryland University College (UMUC), librarians have designed and led a number of multi-day, asynchronous online workshops for faculty. The workshops teach faculty how to meet information literacy goals in the virtual classroom. Through hands-on activities and discussion among their colleagues, participants in the faculty workshops learn about the university’s information literacy standards, library resources and services, free Web tools, and how best to design class assignments involving library research. Library-led faculty workshops at UMUC have increased library visibility and furthered collaboration between faculty and librarians. This article discusses five workshops, detailing workshop content and logistics and demonstrating how librarians can help distance faculty further information literacy goals for students.

Introduction
To meet information literacy goals for students, faculty-librarian collaboration is essential. In “Information Literacy for Faculty and Administrators,” the Association of College and Research Libraries (n.d.) emphasizes the need for such a partnership: “To be successfully implemented on campus, information literacy depends on collaboration between classroom faculty, academic administrators, librarians and other information professionals” (“What Should Faculty and Administrators Know” section). Seeing the emerging world of online social networking and the rapidly multiplying virtual connections between individuals and groups, Raspa and Ward (2000) wrote that “the major, perhaps even the dominant, mode of teaching and learning in higher education will require collaborative relationships” (p. vii). Curzon (2004) called faculty-librarian partnership the very “cornerstone” of a successful information literacy program on campus (p. 29) and noted that information literacy initiatives coming solely from the library are less likely to succeed than programs arising from faculty-librarian collaboration. Similarly, Martin and Williamson (2003) identified “effective collaborations and partnerships” (p. 149) as an important factor in two information literacy programs at Edge Hill College. The programs Martin and Williamson studied were not developed solely by librarians as isolated add-ons to courses, but were created by the library in partnership with faculty and other staff.

Ultimately, information literacy programs succeed when they are no longer the sole responsibility of the library but reach across departmental boundaries through faculty-librarian collaboration. Paglia and Donahue (2003) described an innovative pilot program at the University of New Hampshire at Manchester in which librarians and psychology faculty collaborated to improve upper-level psychology students’ discipline-specific information literacy skills. Such a partnership helps students understand the importance of information literacy within their field of study, as Paglia and Donahue noted: “When teaching and library faculty collaborate to integrate information literacy into the curriculum . . . students gain an increased awareness of the relevancy of library research skills to increased competency in the discipline” (p. 327). Likewise, Grafstein (2002) has emphasized the need for faculty-librarian collaboration. Grafstein outlined faculty’s and librarians’ complementary areas of expertise and how they can be used to teach
information literacy within a discipline, with librarians teaching general information and critical thinking skills and faculty focusing on subject-specific skills.

Numerous other articles describe successful instances of faculty-librarian partnerships (e.g., Atwong & Heichman, 2008; Delgado & Luévano, 2007; Jacob & Heisel, 2008; McNeill & Haines, 2003; Witt & Dickinson, 2003). Many such programs have a common goal: that librarians and faculty will share the teaching of information literacy skills to students, thereby integrating information literacy into the curriculum, rather than isolating it within the library.

The present article demonstrates how librarians at University of Maryland University College (UMUC) collaborate with faculty in library-led workshops to increase awareness of information literacy goals among distance educators and help faculty teach information literacy skills in the virtual classroom. The workshops cover a range of subjects:

- Information Literacy in the Natural Sciences
- Information Literacy in the Social Sciences
- WebTycho Training for Online Faculty: The Library Visit
- Cross-Disciplinary Information Literacy: Google Universe
- Curriculum-Related Information Literacy: Open Educational Resources

These multi-day, asynchronous online workshops include guided discussions, active learning exercises, and a review of library and free Web resources that faculty can use in the classroom to advance their students’ information literacy skills. Within each workshop, various topics are addressed, such as information literacy standards (helping faculty understand general and subject-specific standards), assignment design (helping faculty improve the library research component of assignments), and library resources and services (familiarizing faculty with library databases, subject guides, and tutorials that faculty can in turn use in their online classes).

Institutional Context

University of Maryland University College

UMUC is one of eleven degree-granting, fully-accredited institutions that comprise the University System of Maryland. More than 86,000 students take classes at UMUC; of that number, approximately 36,000 are active duty military personnel. UMUC primarily serves adult learners, and, with students located around the world, the majority of the university’s classes are delivered online.

In accordance with its mission statement, UMUC Information and Library Services (ILS) seeks to educate “students, faculty, and staff in the use of library and information resources and services, emphasizing the critical importance of information literacy knowledge and skills for success in today’s information-rich world” (UMUC Information and Library Services, 2009). One of the ways the library supports its mission is through the library-led faculty workshops presented in this article.

WebTycho

UMUC uses its own course management system, WebTycho, which is similar to Blackboard and other online classroom software. WebTycho is largely asynchronous, with users logging in at their convenience to read material and post content. Threaded discussions take place in an area of the classroom labeled “Conferences.” Other sections of the classroom include Syllabus, Course Content, and Reserved Readings. A Chat Room allows synchronous communication when users are logged in simultaneously. Other Web conferencing software, such as Wimba, can be used in conjunction with WebTycho for synchronous presentations and discussions.

Faculty who will be teaching via WebTycho must complete a five-week training course led by experienced facilitators who introduce faculty to the procedures for using WebTycho as well as best practices for online pedagogy. The library participates in each training session; a section of this article will
summarize and discuss the library component of UMUC’s WebTycho training course, in which faculty learn about library resources, information literacy goals, and assignment design.

**Center for Teaching and Learning**

UMUC’s Center for Teaching and Learning (CTL) offers a wide range of faculty training and development programs online, among which are the library-led workshops discussed in this article. Workshops are held in WebTycho and vary in length: an eight-, ten-, or twelve-day workshop is typical. Faculty who want to take a workshop register via the CTL Web site, where the workshops are advertised. Depending on the nature of the workshop, a cap on the number of participants is set. Workshops in which facilitators have to respond extensively within online discussion threads may have lower caps on the number of participants, so that facilitators can provide sufficient time and attention to everyone in the workshop.

Both full-time and adjunct faculty participate in CTL workshops. Faculty can take workshops at no cost and earn credits in CTL’s Workshop Certificate Program. Thus, when a workshop in this article is referred to as “for-credit,” that means it is part of a formal CTL professional development program. The content and design of for-credit workshops must meet CTL standards, and participants within the workshop earn credit by adequately completing workshop activities and projects. It should also be noted that CTL gathers extensive anonymous feedback from participants after each workshop and shares the feedback with workshop facilitators. The library is thus able to revise workshop content based on the feedback received.

**Subject-Specific Information Literacy: Faculty Workshops in the Natural and Social Sciences**

The library’s liaison to UMUC’s undergraduate sciences department co-facilitates two online, for-credit CTL faculty workshops focusing on subject-specific information literacy goals. The workshops are:

- Information Literacy in the Natural Sciences
- Information Literacy in the Social Sciences

The workshops help undergraduate faculty incorporate subject-specific information literacy goals and skills into their classroom. For the workshop “final deliverable”—the major project in the workshop—each participant designs a classroom assignment that teaches students at least one information literacy skill alongside course content.

Faculty members from a variety of disciplines participate in each workshop. At UMUC, the Natural Sciences department includes hard sciences such as astronomy, biology, chemistry, etc., as well as environmental management. The UMUC Social Sciences department comprises anthropology, behavioral science, gerontology, and sociology. Having instructors from various disciplines participate in a workshop is helpful. For example, in the Natural Sciences workshop, a biology professor may benefit from ideas and experience shared by an environmental management instructor. In fact, the Natural Sciences workshop has been attended by instructors from disciplines outside the sciences per se, such as Homeland Security.

The librarian co-facilitates each workshop with the academic director of the respective departments. The collaboration of librarian and academic director works well. In the workshop, the librarian can answer questions having to do with library resources, search techniques, facilitating students’ use of databases, and so on, while the academic director addresses practical issues of assignment design, classroom management, etc. Also, having the academic director lead a workshop along with a librarian helps lend institutional authority to an information literacy workshop: the department is saying, in effect, that information literacy is important.

Though these workshops are co-facilitated by a librarian and an academic director, the content of the workshops was developed entirely by the library. The library welcomes input, of course, from the academic director (and CTL must approve the content, to make sure it meets certain standards for a for-credit workshop). By creating the content and offering the workshop as a service to the academic department, the library builds a relationship with that department and gains visibility across the university.
Workshop Beginnings

The library was fortunate in that we were approached by CTL and the Natural Sciences department to create an information literacy workshop. A librarian located in UMUC Asia had conducted a smaller-scale online workshop, introducing science faculty at UMUC Asia to library resources in the sciences. With that workshop as a foundation, the library at UMUC headquarters in Maryland then designed a more comprehensive, ten-day, for-credit workshop that welcomed participants from UMUC’s global community in the United States, Europe, and Asia. The Natural Sciences workshop has been held three times since 2006, and the library, CTL, and the Natural Sciences department plan to hold it again.

When the Natural Sciences workshop proved a success, the library approached the Social Sciences department with the idea of holding a similar workshop. It proved relatively easy for the library to adapt the Natural Sciences content to fit a workshop for Social Sciences faculty. The Social Sciences workshop has been given twice since 2008, and there are plans to repeat it.

Workshop Objectives

Per CTL guidelines and library pedagogical philosophy, the workshops are driven by explicit learning objectives. For example, the broad objectives for the Social Sciences workshop are to have participants:

- Understand the definition, basic concepts, and importance of information literacy
- Understand UMUC’s information literacy objectives for undergraduates
- Understand how to help students efficiently find, evaluate, and use social science information resources
- Design an assignment which incorporates one or more of UMUC’s information literacy objectives

Learning objectives lead off individual sections of the workshops as well, as can be seen in the following summary of the workshops’ content.

Workshop Content

Both workshops follow the same outline, the only difference being that the Natural Sciences workshop takes place over ten days, while the Social Sciences workshop lasts twelve; workshop length is a choice of the academic directors. Table 1 shows the schedule for the Social Sciences workshop.
Table 1

**Information Literacy in the Social Sciences**

<table>
<thead>
<tr>
<th>SCHEDULE</th>
<th>TOPIC</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-2</td>
<td>Information Literacy Overview</td>
<td>Review and discuss aspects of information literacy</td>
</tr>
<tr>
<td>Days 3-5</td>
<td>Library Resources</td>
<td>Explore and evaluate library databases</td>
</tr>
<tr>
<td>Days 6-8</td>
<td>The Free Web</td>
<td>Explore how students can best use the Web for research</td>
</tr>
<tr>
<td>Day 9</td>
<td>Sample Assignments, Rubric, and Digital Learning Objects</td>
<td>Review possible resources for your class</td>
</tr>
<tr>
<td>Days 10-12</td>
<td>Final Deliverable</td>
<td>Create and discuss class assignments that incorporate one or more information literacy objectives</td>
</tr>
</tbody>
</table>

As noted above, each section of the workshop begins with learning objectives, for example, these for Days 1-2: Information Literacy Overview:

- Understand the definition, basic concepts, and importance of information literacy
- Understand the role these transferable concepts and skills play in social sciences education
- Understand the role that the faculty and the librarian each have in this process
- Demonstrate an understanding of UMUC’s information literacy objectives

Throughout the workshops, faculty are engaged with discussion questions and short exercises that encourage exploration of library resources. Following are details of the content in each section of the workshops, using the Social Sciences workshop as an example:

**Days 1-2: Information Literacy Overview**

At the beginning of the workshop, participants review UMUC’s information literacy standards for undergraduates (UMUC’s standards adhere closely to the Association of College and Research Libraries’ (ACRL’s) 2000 *Information Literacy Competency Standards for Higher Education*). Faculty are also given links to discipline-specific information literacy standards appropriate to the workshop:

- For the Natural Sciences: ACRL’s 2006 *Information Literacy Standards for Science and Engineering Technology*
- For the Social Sciences: ACRL’s 2008 *Information Literacy Standards for Anthropology and Sociology Students*

Having familiarized themselves with information literacy standards, workshop participants can begin to plan which standards they want to focus on when they design a class assignment for their final deliverable.

Faculty also review a brief exposition of the collaborative roles that course instructors and librarians play in teaching information literacy skills to students. This portion of the workshop emphasizes the course instructor’s subject expertise and the librarian’s general research expertise, and how both of
those skill-sets can be used to help students become information literate within the context of a specific academic discipline.

Discussion questions in this introductory part of the workshop include:

- Which information-literacy skills/concepts do your students lack in the research and writing process?
- Which information-literacy skills/concepts do you find the most challenging to teach?
- Describe an assignment you currently use that addresses one or more of these skills/objectives.

Faculty post their answers to the questions and are encouraged to interact with each other in the online, asynchronous workshop. Hearing faculty discuss their own teaching challenges can be quite enlightening for the librarian who co-facilitates the workshop; indeed, these workshops provide an excellent opportunity for librarians to share ideas with course instructors. Because the workshops are hosted by the library and help the library promote its services to the university, the librarian facilitator plays a very active role in the workshop discussions, replying to practically every participant post in the workshop. While this does make the workshop labor-intensive for the librarian leader, the academic director who co-facilitates the workshop shares the librarian’s workload. However, because the workshop is primarily a library event, the librarian must be prepared to carefully monitor and participate extensively in the workshop as a whole, and especially during the online, asynchronous discussions. The Natural Sciences workshop was first held with over twenty participants; because of the workload for the facilitators, subsequent workshops were restricted to a maximum of fifteen participants.

Days 3-5: Library Resources

In this part of the workshop, faculty review library databases and other resources relevant to their subject areas. The content includes, for example, lists and descriptions of discipline-specific databases as well as guides to using those databases.

When our librarians were originally creating the material on library resources, the question arose: should the workshop include content on basic searching techniques, such as using AND, OR, and NOT, and so on? Would faculty consider that kind of content condescending? Librarians decided to include the content but to present it as review material that faculty could share with students. That way, beginning student researchers can be seen as the audience for the more basic material, though workshop participants may benefit from it as well. Indeed, any of the workshop material that would be helpful for students, such as tips on using a specific database, can be used by faculty in their classes.

One important outcome of the workshops is, in fact, faculty’s increased awareness of library resources that can be placed in the online classroom to help students and to support assignments and the syllabus as a whole. When, for example, the topic of students’ citation skills comes up in the workshop, the librarian will show links on the library’s Web site to citation guides; the librarian also reminds faculty that those links can be placed anywhere in an online classroom, particularly at a point of need to help students when they have to begin citing sources.

In this section of the workshop, faculty complete an exercise in which they explore a library database with a view to how their students might use the database in a research assignment.

Days 6-8: The Free Web

Because students make such heavy use of the free Web, often ignoring library databases entirely, and because that is of great concern to faculty, this is a vital part of the workshop. Faculty are pointed to resources such as library guides to evaluating Web sites (which, again, faculty can in turn place within their online classrooms) and alternative search tools that students may not be aware of, such as scirus.com and usa.gov.
Discussion questions prompt faculty to share their views on how they use the free Web in their classroom—whether, for example, they put restrictions on the use of Wikipedia. Faculty also complete an exercise in which they brainstorm, but do not have to fully flesh out, a class assignment that involves research on the free Web.

Day 9: Sample Assignments, Rubric, and Digital Learning Materials

This portion of the workshop is a hiatus: participants do not have to complete an exercise or answer discussion questions. Instead, they simply review material, such as sample assignment ideas presented by the librarian. Here is an example of a sample assignment:

- **Library database: JSTOR**
  - Using a topic of interest to the class, compare a decades-old research article from JSTOR to a more current article
    - It would probably be best for the instructor to pre-select two articles for students to compare.
  - Based on the two articles, how has scholars' thinking on the topic changed? Are there ideas and facts available to the contemporary author(s) that were not available to the earlier author(s)? How could the old article be used in a research paper? Are there ideas in the old article that are still valid today? Are some aspects of the older article no longer valid?
  - **Learning Outcome:** Students will understand that scholarship changes over time and be able to judge the usefulness of older information.

The sample assignments are meant to help instructors think creatively about using library resources to teach information literacy skills.

This section of the workshop also contains a sample information-literacy grading rubric that instructors can adapt and include within a larger research-project grading rubric.

Also, faculty are briefly introduced to digital learning objects and websites such as MERLOT (www.merlot.org) that can be searched for subject-specific materials to be used in the classroom.

Days 10-12: Final Deliverable

In the last three days of the workshop, participants design a classroom assignment that incorporates at least one information literacy learning objective. The assignment can be designed from scratch or it can be an assignment that the instructor has used before and now reworked to include one or more information literacy skills. Each participant posts their finished assignment in the workshop and receives feedback from other participants and from the workshop facilitators.

The following example of a final deliverable shows how the process works, with faculty creating an assignment and revising it according to feedback from colleagues in the workshop.

A biology professor in the Natural Sciences workshop designed an assignment whose goal was to introduce beginning students to scholarly scientific literature and enable the students to understand and analyze a scientific research study. Feedback on the assignment from workshop participants helped to hone both the presentation and the content of the assignment. For example, her colleagues in the workshop helped the professor reformat the assignment in a more visually appealing manner (which of course is essential in an online classroom), employing color, tables, and so on. The workshop facilitators suggested that the assignment be broken down into small steps. Indeed, “staging” assignments by having students complete them in manageable steps is a best practice of assignment design that is emphasized in the workshops.
Subject-Specific Information Literacy Workshops: Conclusion

Hosting a subject-specific information literacy workshop for the faculty of a single department helps raise library visibility and furthers collaboration between the library, academic directors, and teaching faculty. The librarian who leads the workshop has a unique opportunity to interact with classroom instructors and promote library services to them. Content creation for a multi-day workshop is time-consuming, but content created for one academic department can be adapted for use with another. As a workshop facilitator, the librarian also has to devote a good amount of time during the workshop, playing an active role in it.

Workshop participants come away with concrete library resources they can place directly in their online classroom; a better understanding of information literacy goals and how students can be helped to achieve them; and experience designing a classroom assignment that teaches information literacy skills alongside course content.

WebTycho Training for Online Faculty: The Library Visit

As stated earlier, all UMUC faculty who teach online with WebTycho (UMUC’s course delivery system) take a five-week training course during which they become familiar with the mechanics of WebTycho as well as some major concepts about online pedagogy. During the third week of this training the library posts a module in the course content area of the WebTycho faculty training class. The module consists of a text lecture and a conference. The conference is a discussion area for interaction between the librarian visiting the class and the faculty members who are engaged in the training. The week of interaction between the librarian and the faculty is referred to below as the “library visit.”

Faculty

UMUC faculty comprises full-time collegiate professors as well as many part-time adjunct instructors. Many full-time collegiate faculty also serve the university in administrative roles such as course chair or departmental director. Adjunct instructors come from a variety of backgrounds, but they are primarily professionals in their respective fields. Some adjuncts teach at other higher education institutions while also teaching with UMUC. It is not uncommon for faculty to have experience teaching face-to-face in a traditional setting, but to have little or no experience teaching, or learning, online. Many faculty members are entering the teaching field or returning to it without much background in online research processes. Or, if they are familiar with online research, they are not familiar with UMUC’s unique resources and procedures.

Objectives and Learning Outcomes

The library visit in the WebTycho faculty training class seeks to go beyond the traditional library orientation for students, in which a librarian formerly gave a guided tour of a library facility. Rather, the visit seeks to orient faculty to the online research environment. It also seeks to establish a relationship of trust and collaboration between the library and faculty in which student learning outcomes are emphasized.

Since the university is committed to promoting information literacy and lifelong learning objectives, the training session with faculty is a unique opportunity to orient them to the university’s information literacy initiatives and resources. The session provides an encouraging and collegial setting in which faculty who are new to teaching online can learn about the library’s supportive function for them and their students. It gives faculty practice with some of the library research databases that their students use, so they get a firsthand view of the challenges facing online students in their research. And it gives them an opportunity to practice creating assignments that promote the information literacy and lifelong learning objectives of the university.
The learning outcomes for the library visit are as follows:

- Demonstrate proficiency in searching the library databases for materials to support faculty’s teaching and learning efforts
- Map selected tasks/assignments to the information literacy standards of the undergraduate or graduate schools

**Content of the Library Visit**

The library visit focuses on the following elements:

**Review of Library Services and Resources that Support UMUC Classes.** This section of the library visit reviews library services and resources that faculty can use to support their teaching efforts. First there is a description of the service or resource, followed by a suggestion on how to use it in classes. The module describes the following resources and services and offers suggestions for their use:

- Reference services through instant messaging, live online chat, e-mail, telephone, and walk-in
- Library instruction, including a tutorial space on WebTycho called the Peck Virtual Library Classroom (VLIB101)
- Electronic reserves for placing required readings in WebTycho and handling copyright permissions and fees
- Citation formatting advice for APA, MLA, and Chicago/Turabian styles
- Document delivery of books, book chapters, articles, etc.
- Technical assistance for faculty who use UMUC’s Turnitin account (turnitin.com) to check the originality of students’ papers and projects

**Review of Library Resources for Research.** At this point, the library visit emphasizes the library’s tutorials and other instructional materials on how to effectively conduct online research. These learning objects show faculty how to use the library’s Journal Finder tool to identify which database has full-text articles from a particular journal. Faculty learn how to use our cross-linking tool, Find It, to cross-search multiple databases in the collection in order to jump from the citation for an article in one database to the full text in a different database. Instruction about these tools is especially important for faculty who have been away from research for a while.

**Research Port and Google Scholar at UMUC.** The library visit reviews UMUC’s federated search tool, Research Port, which allows users to simultaneously search up to eight databases at a time. Research Port is designed for use by institutions of the University System of Maryland and Affiliated Institutions consortium, of which UMUC is a member. The library visit includes material on Research Port’s strengths and weaknesses.

In addition, the visiting librarian provides instructions for logging into Google Scholar as a UMUC resource and searching it effectively. The visiting librarian also highlights the benefits and drawbacks of using Google Scholar as a research tool.

**Information Literacy Objectives at UMUC and Faculty’s Role in Promoting Them.** The next stage of the library visit lists and defines the information literacy objectives to which UMUC is committed. It explains the role of information literacy in the university’s accreditation process, in which faculty are stakeholders.

Faculty are introduced to UMUC’s two required information literacy related courses, LIBS 150 for undergraduate students, and UCSP 611 for graduate students. Faculty come away with an idea of the kind of research skills that students learn in those courses. However, the visiting librarian emphasizes that
no single course in research can effectively teach everything there is to know about the subject. The library visit reinforces the idea that information literacy concepts and skills need to be continually reinforced within the context of the courses students take at UMUC.

Creating Library-Related Assignments. Finally, the library visit offers tips and suggestions for incorporating information literacy standards in discipline-specific assignments. These suggestions are reinforced in the conference area of the library visit when faculty share assignments they have created that focus on information literacy objectives.

Exercises and Interaction

To reinforce what they have learned during the library visit, faculty must complete two library exercises. The exercises make up 10% of the faculty members’ final scores in the WebTycho training course. The visiting librarian is responsible for grading the faculty members’ responses and reporting scores to the trainer/facilitator.

This section of the WebTycho training represents a collaboration between the UMUC library and CTL, the department that oversees WebTycho faculty training. In a sense, the librarian is a visiting lecturer presenting an integral component of the training as a whole. Faculty in the training class take the library visit very seriously and participate in the required exercises to the best of their ability.

Exercise One. The first exercise gives the faculty practice accessing the UMUC library research databases and conducting a search in any of three different ways described below. The exercise is presented as an opportunity to research a meaningful question from the point of view of a student. Familiarity with the students’ perspective is important for creating effective information literacy tasks and assignments. The library provides login information to each faculty member that allows them to access and search the library research databases in the UMUC collection.

Each faculty member is asked to state a research question of personal interest or one that might be assigned to students in a real UMUC class. A sample research question is presented: “Does adolescent exposure to violence in mass media contribute to juvenile delinquency?” But the visiting librarian encourages faculty to research their own question that is meaningful for the class or classes they teach.

Faculty are given three options for conducting their search, along with instructions for each option.

1. Search across disciplines in order to more comprehensively address a topic from a variety of perspectives. Users can access library research databases through a number of Subject Guides created by reference and instruction librarians at UMUC. For example, for the sample question about media violence and youth, users might select library research databases from subject guides in the areas of communication, psychology, and criminal justice.
2. Search several databases one at a time within the focus of a single discipline. Users can access and search a number of different databases in the subject guide for Communication and Journalism, for example.
3. Search several databases simultaneously using UMUC’s federated search tool, Research Port.

Faculty report on the subject guides they used, the databases they selected, the search terms they employed, and conclude with a brief description of their results and their experience with the search tools.

Many faculty remark that the exercise helps them view the research process from the student perspective and makes them aware of the kinds of research assignments that are feasible and effective. For those faculty members who assume that research is not possible for students at a distance without access to brick-and-mortar libraries, the exercise demonstrates that meaningful research is possible regardless of location.
Exercise Two. This exercise has faculty write or revise an assignment for a class they will teach. The assignment must address one or more of the information literacy objectives that were introduced in the library module. Faculty post their assignments for review and state which information literacy objectives are addressed.

Outcomes and Conclusion

After the training, many faculty members request library instruction sessions for their classes. They are more familiar with the possibilities of teaching online and do not shun library visits, knowing that library instruction can be done in the online classroom. Requests for electronic reserves increase once faculty know that the library seeks copyright permission and pays applicable fees. Participation in other library-related workshops is high, and anecdotal evidence tells us this is partially based on faculty having experienced success in the library portion of their WebTycho training.

Cross-Disciplinary Information Literacy: Google Universe

Two UMUC librarians co-facilitate an online, for-credit CTL faculty workshop focused on using Google’s search tools in an informed manner, and on providing an overview of complementary, subscription-only resources offered by the library.

The workshop teaches faculty how to search efficiently and effectively for information using Google, explains Google’s limitations as a tool for academic research, and introduces alternative resources that are available to researchers. This is done in hopes of making faculty more skillful searchers, and also to prepare them to assist their students in meeting UMUC’s information literacy learning objectives.

The library independently developed the content for the workshop, and it was reviewed by CTL to ensure that it met their standards for a for-credit workshop. In creating and offering the workshop, the library’s goal is to promote information literacy among faculty and students and demonstrate the importance of library resources for academic research.

Workshop Beginnings

In working with students and faculty, UMUC librarians have noted that many researchers turn first to Google when looking for information for academic projects. Fast and Campbell (2004) are among the authors that have suggested that this preference is now nearly universal and often a hindrance to patrons in finding the information that they need for their work. We have further noticed that many patrons do not make use of the advanced search options available in Google, and that demonstrating the utility of these options often presents a useful opportunity to provide more general instruction on the use of Boolean operators and other search techniques.

With these facts in mind, the library approached CTL in December 2006 about developing a workshop on improving faculty’s searching skills, using Google’s name recognition as a “hook” to attract participants. “Google Universe: How to Make the Most of Your Students’ Favorite Resource” was created over the winter and first offered in April 2007. The workshop has since been held three additional times and is tentatively scheduled to be offered again in early 2010.

Workshop Objectives

In keeping with CTL and library guidelines, the workshop was designed to meet specific earning objectives. Upon completion of the workshop, faculty are able to:

- Perform advanced searches in Google that afford more precise and useful results
- Find scholarly articles and grey literature using Google Scholar
- Search for books using Google Books and determine whether full-text is available online
- Access and generate maps using Google Maps and Google Earth for use as instructional tools
- Use Google Images and understand related copyright issues
- Understand the pros and cons of using Google for academic research

Learning objectives are stated in the workshop’s syllabus and reiterated in the facilitators’ introduction in the online classroom on Day 1.

Workshop Content

Table 2 shows the schedule for the Google Universe workshop.

Table 2

<p>| TABLE 2: GOOGLE UNIVERSE |
|---------------------------|--------------------|</p>
<table>
<thead>
<tr>
<th>SCHEDULE</th>
<th>TOPIC</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Introduction; Advanced Searching</td>
<td>Overview of Google searching; introduction to advanced and Boolean searching in Google</td>
</tr>
<tr>
<td>Days 2 &amp; 3</td>
<td>Google Scholar</td>
<td>Overview of Google Scholar; introduction to searching options and understanding results; discussion of options for full-text access via Scholar and library databases</td>
</tr>
<tr>
<td>Day 4</td>
<td>Google Books</td>
<td>Introduction to Google Books and attendant legal issues; discussion of searching options and interpreting results; overview of free e-book and library options for accessing book content</td>
</tr>
<tr>
<td>Days 5 &amp; 6</td>
<td>Google Earth Google Maps Google Images</td>
<td>Accessing Google Earth, overview of its features, and suggestions for classroom use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accessing and using maps, creating mashups, and classroom use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completion of deliverable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discussion of Google Images, copyright issues and classroom use; additional resources for obtaining images on the Web</td>
</tr>
<tr>
<td>Day 7</td>
<td>Keeping Up with Google; Questions &amp; Final Comments</td>
<td>Resources that workshop participants can use to keep apprised of developments with Google</td>
</tr>
</tbody>
</table>
To encourage participation and exploration of both Google and library resources, participants are required to complete three exercises (due on Days 2, 4, and 6). In order to receive credit for the workshop, participants are also required to contribute substantively to at least four of the daily discussions.

Day 1: Introduction and Advanced Searching

On Day 1 of the workshop, participants are given a brief overview of Google’s history and of what can and cannot be found using Google (the latter topic is covered in more detail on Day 2.) The rest of the day is devoted to an introduction to Google searching, with an emphasis on using the advanced search form and on available search operators, including Boolean and Google-specific operators. Required Exercise 1 is included in the Day 1 reading and asks participants to do the following:

1. Select two topics to research, along with keywords that could be used to find information on them
2. Try two searches for each topic, the first using only keywords, and the second using two or more search operators
3. Post the initial search statements used, the search statements that include search operators, and the number of results generated by each
4. Write a short assessment describing which searches provided the most useful results

Participants post their answers in a conference dedicated to the exercise and are encouraged to ask questions and respond to one another’s posts. One of the librarian facilitators responds to all postings, offering feedback and suggestions for improving searches, and answering questions. Day 1 serves both as a specific introduction to creating more sophisticated Google searches and to the concept of using search operators and advanced search options more generally.

Days 2-3: Google Scholar

The second and third days of the workshop are devoted to fostering a detailed understanding of what can and cannot be found using Google, and of how to search for scholarly articles and grey literature using Google Scholar. Other important tools for academic research are also reviewed, with an emphasis on databases that are available through the library.

Participants are given instructions on using Google Scholar’s advanced search form, on finding freely available full-text materials, and on how to link from Google Scholar to subscription database content using UMUC’s full-text linking arrangement with Google. An overview of available search operators and detailed guidance on interpreting Google Scholar results are also included in the course module. Required Exercise 2 is due at the end of Day 3, and requires participants to:

1. Search for two scholarly articles using Google Scholar
2. Post the author, title, and source publication for both articles
3. Post the search statements used and whether full-text was available. If full-text was found, indicate whether it was freely available or accessed through a UMUC library database

As on Day 1, a separate conference is created for the exercise, and participants are encouraged to ask questions and to respond to postings by their classmates and by the facilitator. Days 2 and 3 are intended to provide a “crash course” in resources available to faculty for finding the full-text of scholarly articles and other research materials, as an introduction to subscription-only resources for those who are unaware of them, and to the advantages and disadvantages of Google as a tool for college-level research.
Day 4: Google Books

On Day 4, the workshop delves into the world of Google Book Search. The module begins by providing an introduction to the beginnings of Book Search and touches on Google’s purported goal to create a “universal library.” A description of the scope of Book Search’s content follows, including examples of what a query will and will not find.

As in the Google Scholar module, participants are provided with a detailed description of Book Search’s advanced search form and the effectiveness of its various search limiters. In addition, search operators specific to Book Search, such as limiting by ISBN and publisher, are introduced. A sample Book Search results page is provided, along with the three categories of book search results: full view, limited preview, and snippet view. In addition, when full text of a book is unavailable using Google, instructions for locating libraries holding the book are included.

Google has been embroiled in several lawsuits over the scanning of copyrighted books. These are briefly addressed on Day 4, which also provides some educated guesses about the possible future direction of the project.

The module concludes by looking at alternatives for accessing e-books, including Project Gutenberg (www.gutenberg.org) and the NetLibrary database. A brief introduction to borrowing print books from the University of Maryland libraries is also provided. No deliverables are required in this module, but participants are invited to post comments and ask questions regarding the content.

Days 5-6: Google Earth, Maps, and Images

In Days 5 and 6, the workshop switches gears. Rather than focusing on traditional resources such as journal articles and books, the co-facilitators present three of Google’s more innovative products and suggest ways they can be integrated within the online classroom. To this end, the module features a discussion of Google Earth, Maps, and Images.

Google Earth

The Google Earth section of the module begins by providing access information for the program, including links leading directly to Google Earth’s download page. It then describes techniques for searching a variety of places using the program, including a “sightseeing tour,” a layers tool that depicts detailed features, and a geographic web that inserts place marks on various areas of interest.

After instructing participants in navigating within Google Earth, a variety of suggestions for using Google Earth within the classroom are introduced. The Sierra Club, for example, created an image using Google Earth that depicted the ramifications of drilling in the Arctic National Wildlife Refuge—something of interest to geology professors and students. Another example used in the workshop is an image created using Google Earth depicting the travels of Odysseus—something of interest to professors and students of literature.

Images, of course, are an excellent complement to text in the online classroom and engage students, particularly those who are visual learners. The workshop points out that Google Earth offers faculty numerous opportunities to add stimulating visual content to their classroom presentations.

As in the Book Search module, no deliverable is included in the workshop’s Google Earth section, but participants are again invited to post comments and ask questions.
Google Maps

In the Google Maps section of the module, participants are first provided instructions for accessing Google Maps, and then its coverage is briefly discussed. The workshop goes on to describe various ways to navigate within Google Maps.

The development and use of mashups is addressed in the module, and an example is provided, along with Web sites devoted to creating, promoting, or displaying new map mashups. As in the Google Earth section of the module, various suggestions are made for making use of Google Maps in the classroom.

The deliverable for this section of the workshop requires participants to demonstrate how they might use Google Maps as part of their online instructional material. Participants create a Google Map using open source software to demonstrate or reinforce an instructional idea. Some of the responses by the participants included a map illustrating how geography affected the 1848 Seneca Falls women’s rights convention and one depicting the four original locations of the ARPANET Computer Network that eventually gave rise to the Internet.

Google Images

The final section of the module addresses Google Images. After a brief discussion describing how Google searches the Web for images, the workshop then provides information on using Google Image’s advanced search page. Following the advanced search page section, the workshop offers information on copyright and Google Images, including a discussion about one company that sued Google for copyright infringement.

Because students (as well as faculty) often ask librarians whether they can insert images found on the Web into PowerPoint presentations, the workshop provides some guidance on using Google Images in the classroom. The workshop also suggests several additional sites, such as Smithsonian Images (smithsonianimages.si.edu), that encourage use of their images for educational purposes.

Days 7-8: Keeping Up With Google / Wrap-up

The workshop describes Google as a “moving target,” in that new services are added monthly and the interface and functionality of the site is in an almost constant state of revision. The workshop concludes by noting a number of resources that can be used by participants to keep abreast of changes and developments at Google.

Google Universe: Conclusion

Google Universe provides an opportunity for participants to learn how to use search tools in a more informed manner. By sharing search skills with faculty and discussing how Google tools can be used in the online classroom, librarians help faculty meet information literacy goals for their students. The co-facilitators have noticed that participants often come to the workshop with the assumption that Google is simple and the library is not. While completing workshop exercises, however, faculty encounter complications and drawbacks with Google, at which point the librarian co-facilitators have the opportunity to demonstrate the complexities and potential advantages of both Google and library resources. One of the primary benefits of the workshop is showing the true complexity of Google; library workshop leaders can use that as a stepping stone to addressing how Google and library resources can complement one another, ultimately providing a better research experience for faculty and their students.
Curriculum-Related Information Literacy: Open Educational Resources

Two librarians co-facilitate an online, for-credit CTL faculty workshop focusing on curriculum-related information literacy goals. The workshop is entitled “How to Find, Evaluate, and Use Open Educational Resources (OERs) in Your Classes.”

The workshop helps faculty incorporate curriculum-related information literacy goals and skills into their classroom. For their major deliverable in the workshop, participants are asked to find an OER that could be incorporated into a class that they teach.

The content of the workshop was developed entirely by the library to meet CTL standards for a for-credit workshop. Open to university faculty of all disciplines, both undergraduate and graduate, this workshop strengthens the library’s relationship with CTL and academic departments across the entire university.

Workshop Beginnings

In 2008, CTL asked the library to create an OER workshop for CTL’s Summer Faculty Leadership Institute. An annual event, this face-to-face institute is attended by select UMUC faculty (approximately fifty persons) from around the world. After presenting the workshop face-to-face at the Summer Institute, UMUC librarians reshaped the content into an eight-day, for-credit online CTL workshop. Presenting the workshop face-to-face was a significant opportunity for the library; converting the workshop to an online format enables the library to build on that opportunity and reach an even larger audience of faculty members. The workshop was held twice in 2009 and will continue to be scheduled about once a year.

Workshop Objectives

CTL guidelines and library best practices require that learning objectives be used to frame workshop activities. In this workshop, participants:

- Explain what OERs are, along with advantages and disadvantages associated with their use in classes
- Find OERs that could be used as-is or that could be adapted for use in their own classes
- Evaluate OERs for suitability for use in their classes
- Adapt OERs as necessary for use in their classes
- Understand copyright, accessibility, and other issues that may constrain the use of OERs in a class
- Find additional information (including journal articles) about OERs

Table 3 summarizes the workshop's content and also highlights learning objectives for each section of the workshop.
Table 3

**Open Educational Resources**

<table>
<thead>
<tr>
<th>SCHEDULE</th>
<th>TOPIC</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Introduction to Open Educational Resources</td>
<td>Understand what OERs are and review the history of the OER movement</td>
</tr>
<tr>
<td>Day 2</td>
<td>Finding Additional Information About OERs</td>
<td>Using a library database or the free Web, find an article about OERs and discuss how the article adds to your understanding of OERs and how they can be used in the classroom</td>
</tr>
<tr>
<td>Day 3</td>
<td>Evaluating OERs</td>
<td>Find an OER relevant to your discipline and evaluate it according to a set list of criteria</td>
</tr>
<tr>
<td>Day 4</td>
<td>Copyright Issues and OERs</td>
<td>Find an image that could be used in your class and find its licensing information</td>
</tr>
<tr>
<td>Day 5</td>
<td>Using OERs in the Classroom</td>
<td>Find an OER that you could use in your class and discuss how you could use it to enhance your teaching (Major Deliverable)</td>
</tr>
<tr>
<td>Day 6</td>
<td>Adapting and Sharing OERs</td>
<td>Edit a Wikipedia article</td>
</tr>
<tr>
<td>Days 7 &amp; 8</td>
<td>The Future of OERs and Conclusions</td>
<td>Consider the future of the OER movement and how OERs might affect education, particularly at UMUC</td>
</tr>
</tbody>
</table>

As a whole, the workshop encourages discussion among participants and creates opportunities for faculty to explore OER resources. Details of each workshop section are presented below.

**Day 1: Introduction to OERs**

Faculty are introduced to OERs, including definitions, history, funding, and use throughout the world.

Faculty answer questions about the material presented and are encouraged to interact with each other as well. As with the other library-led workshops described in this article, the librarians co-facilitating this workshop have to spend a good deal of time monitoring and actively participating in the online discussions.

In addition, the librarians compile and make available a reference list and Webliography of OER-related material and resources that participants can use during and after the workshop.

**Day 2: Finding Additional Information about OERs**

In this part of the workshop, faculty review material on using library resources and the free Web to locate OERs and to find more information about them. Workshop facilitators also present information on other resources, such as subject-specific OER collections and OER repositories.

As part of a hands-on learning activity, faculty are asked to find an article about OERs that has not already been presented in the workshop by the facilitators or by another participant. Faculty then answer the following questions:

- How does the article that you found add to your understanding of OERs and how they can be used in the classroom?
• Does the article add to your knowledge of the field of education in general or of your discipline in particular?

Each participant posts a complete citation for the article he or she found.

Day 3: Evaluating OERs

In this section, material is presented on the pros and cons of using OERs in the classroom. In addition, a checklist for evaluating OERs (based on the library checklist for evaluating Web sites) is provided. It includes the evaluation criteria of authority, accuracy, objectivity, currency, and coverage.

The task for this day involves going to the OER repository Curriki (www.curriki.org), creating a free account, finding an OER in the faculty member’s subject area, and evaluating it according to the above criteria.

Discussion about the evaluation criteria and the actual evaluation of the resources then takes place.

Day 4: Copyright Issues and OERs

This portion of the workshop covers copyright and licensing issues regarding OERs. The basics of copyright law are discussed, as is information about finding and using appropriate copyright licenses from Creative Commons (creativecommons.org). Information about obtaining additional copyright information from UMUC’s Center for Intellectual Property (CIP) is included. (CIP had first reviewed the content for this section of the workshop to ensure that it was correct, and CIP staff agreed to field copyright-related questions from workshop participants.)

For an activity, faculty are asked to find an image on the Web and determine what type of license it has and what type of requirements might govern its use in the classroom. Participants are asked to discuss the pros and cons of using the image they found in their classroom and how they might use a Creative Commons license for their own work.

Day 5: Using OERs in the Classroom and Major Deliverable

During this day of the workshop the material presented includes a discussion on how to incorporate OERs into UMUC classrooms. A sample OER (a video) that was used in a UMUC classroom is displayed. The discussion revolves around concerns about incorporating OERs into online classrooms.

For the presentation of the major deliverable, faculty are asked to find an OER that they could use in a class that they teach and to discuss:

1. What is the URL for the OER?
2. What class could you use the OER in?
3. How would using the OER in your class benefit your students?
4. Could you use the OER as is, or would it need to be adapted for your class? If it would need to be adapted, how would you adapt it?
5. What type of assignment could you create that incorporates the OER?
6. What type of equivalent assignment could you create for your students who aren't able to access the OER?
7. How could you determine whether the OER was incorporated successfully into your class?

The faculty then work on the presentation of the major deliverable for the remainder of the workshop.
Day 6: Adapting and Sharing OERs

This day’s material includes a discussion of how to create an account in Wikipedia and how to edit an OER found there. The facilitators also present instructional material that UMUC librarians use in class to teach students about Wikipedia.

Discussion revolves around the experience of editing Wikipedia articles and the use of Wikipedia in the classroom.

Days 7 & 8: The Future of OERs and Conclusions

The final two days of the conference are devoted to discussing where the OER movement is headed and the future of using OERs in UMUC online classes.

Discussion involves topics such as using OERs to replace or supplement traditional textbooks and lectures and how the use of OERs might affect traditional education models.

Open Educational Resources Workshop: Conclusion

Participants come away from the workshop with a good sense of what OERs are, as well as advantages and disadvantages associated with their use in classes; confidence that they can find, evaluate, and (if necessary) adapt an OER for use in their classes; an understanding of copyright, accessibility, and other issues that may constrain the use of OERs in a class; and the ability to find additional information (including journal articles) about OERs.

By hosting this multidisciplinary workshop, the library furthered its collaboration with academic departments across the university and increased its partnership with CTL and CIP.

Conclusion

Library-led faculty workshops offer excellent opportunities to further a library’s collaboration with individual faculty members, academic departments, and other units within the university. Workshops that raise distance educators’ awareness of a library’s online resources and services, and that help faculty create classroom assignments that make the best use of those resources and services, ultimately help the university reach its information literacy goals for students.

Though designing and facilitating a workshop represents a significant time commitment on the part of the library, each workshop, once created, can be presented multiple times. The workshops, however, do not remain static: librarians update content as needed and make revisions to further enhance the participants’ experience in the workshops. Furthermore, an existing workshop can readily be adapted to another topic: for example, a workshop on information literacy in the natural sciences can be adapted to one on information literacy in psychology. With even a few successful workshops in place, a library can envision addressing any number of information-literacy related topics in faculty workshops.

Being able to offer workshops, as the UMUC library does, in partnership with a department like the Center for Teaching and Learning, gives library-led workshops a certain visibility and importance. However, smaller-scale, less formal library-led workshops, offered directly to an academic department, for example, or to interested university staff, can also be an effective means of outreach and building partnerships between a distance library and other entities within the university.
References


Spatial Metaphors and Distance Learning Library Services: Why “Where” Makes a Difference

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Abstract

A close analysis of spatial metaphors used in distance education, such as “distant” education and “extended” courses, shows how these metaphors affect the design and goals of distance education library services. While some metaphors emphasize the possibilities of growth and communication, other metaphors continue to emphasize the isolation of distance learners. Distance librarians can reduce students’ confusion and forge new concepts about distance library services with thoughtful choices of metaphors.

Introduction

Several recent articles about distance library services have asked the question “where is the library” in various forms. Far from being the traditional building full of books, academic libraries are increasingly meeting spaces, socializing spaces, and thinking spaces, as much as they are storage and study space. This change has come as a relief to those of us who worried that the physical library may become nothing more than a storage facility as most library resources went online. In fact, that movement of information online is one of the founding notions of many distance education programs: if everything is on the ‘net, let’s (a) save money on classrooms and books by delivering education online and (b) assume online education is always equal to an on-campus, face-to-face education.

These misconceptions about the locations of knowledge and learning are problematic for distance library services. Indeed, the library seems misplaced, ignored, or forgotten in many distance education programs and librarians have had to work hard to establish a presence for the library in the minds of distance education administrators, faculty, and students. At the same time, in the face of reduced budgets and increasing enrollments on many university campuses, where to focus money and energy in the library is no small question. However, the absence of the distance library probably is not necessarily just the result of an oversight or a lower priority for library skills, but rather a limited vision of distance education in general. One way to see how distance learning programs may be defining themselves away from the kind of education that requires or is enhanced by traditional or virtual library resources is to look at the metaphors of those distance learning programs. Most distance education programs use some kind of metaphor to describe their work. For instance, some programs are “extension” programs while others are “outreach” divisions. Looking at the language, the root metaphors, and the ethics of space and location, in the context of distance education, reveals the tacit meanings behind such terms as the “delivery” of library services, “off-campus” students, “distance” library services, “extended” coursework, and so on. Analyzing these spatial metaphors of distance learning can help librarians analyze past practices and evaluate the best directions for the future.

The Power of Metaphors: How They Work

On the surface, many of the metaphors we notice seem like colorful ways to assist our understanding. In the library, we tend to use a lot of water metaphors: a “wave” of patrons might come in on Sunday night, we get a “flood” of phone calls about a particular resource, or we might feel hit by a “tsunami” of assessment requirements at the end of the semester. However, the metaphors that are less noticed and more ingrained in our thinking deserve a second look. Lakoff and Johnson’s (1980) groundbreaking study of metaphors describes how we map a source domain such as oceans to the target domain of patrons or activities. Most metaphors are not unilateral or universal, but mixed and contingent, as with our several common metaphors for the Internet: an information superhighway, a web, and a net. Lakoff and Johnson argue that the systematicity of metaphorical language helps us understand one thing in terms of another, but also hides some aspects of that thing (p. 10). So we must be careful to examine
metaphors for what they illuminate as well as for what they hide. One of Lakoff and Johnson’s examples is the pervasiveness of the metaphor of war for the act of arguing ideas: we “attack” position and “win” debates. We also use metaphors of structures: we “construct” arguments that may be “strong” or “weak.” Seeing arguments as wars, however, limits our ability to see arguments in other ways, such as dialogues or journeys toward understandings, to use two other metaphors. Our penchant for associating positive activities with “up” and negativity with “down” also creates a limiting situation where we may find it difficult to imagine an activity as neither up nor down.

Another orientational metaphor, relevant to this study, which Lakoff and Johnson (1980) describe, is the metaphor of closeness, which we associate with the strength of the effect of something or the primariness of the nearest thing to our own bodies. A strong effect is associated with a physical closeness. For instance, if I am “close” to you, then I have emotional ties which make it possible to affect your behavior, regardless of the physical distance between us. In the same way, being farther away is a weaker effect, as in the idiom “you are far from correct.” Other matters that we associate metaphorically with closeness are careful and in-depth analysis, as in a “close reading” of a text, and accuracy as in “sticking close to the script.” Ideas can be “close” and “far” depending on how radically they “stray” from traditional notions. We can be “far from satisfied,” and an experience can be a “far cry” from another experience that turned out to be very different from what we expected. We often describe relationships in terms of physical distance, as in my “distant relatives” and “keeping my distance” from people I don’t like. Not all of our spatial metaphors for closeness are positive nor are those for distance negative, however, even though the bulk of them seem to fall into that dichotomy. One may be too “close for comfort” and one may be helpfully “far-seeing” when planning for the future.

Lakoff and Johnson (1980) feel that these types of orientational metaphors are closely tied to our physical relationships in the world which is important in an analysis of distance library services. If our primary understanding of physical closeness is also associated with the depth and care of ideas and a clearer understanding of problems, then we will have a natural tendency to associate distance education with something less rigorous than “close” or on-campus education. Our experiences with the world can also alter our use of metaphors. For instance, Palmquist’s (2001) study of metaphors for the Internet preferred by undergraduates revealed that the frontier and a highway were predominant metaphors for the Internet, but that the preferences depended at least in part on the amount of experience the undergraduates had with using the Internet. Many librarians have commented on the problems of the metaphor of “surfing” for information on the Internet, because while on one hand it emphasizes a robust and risk-taking attitude, it also emphasizes a superficial search for transitory information (Meyer, 2005, p. 1611).

**Studying a Group of Distance Education Metaphors**

Distance education websites reveals the most common metaphors used for university distance education. Each one embodies a physical-spatial metaphor and a convergence of physical and virtual locations. In my brief, informal study, I searched the websites of 22 flagship or major land-grant universities in the Midwest. A few universities have no specific distance education programs or at least no web pages for those academic divisions, so this group of 22 was selected on the basis of webpage availability. I looked for how they described their academic, credit-granting programs (not the life-long learning programs or international studies). These statements were generally giving an overview and general mission for the program or division. Many of them reflect the older version of distance learning that was intended solely for post-baccalaureate education: “continuing” education after college, for professional or personal development. Others reflect the land-grant historical mission to “extend” knowledge and services outside the academic world (not just physically off-campus) to agricultural and manufacturing sectors. County extension services, for instance, are a staple of rural life and an important source of specific types of information for local needs. However, all 22 included for-credit and degree programs. Several, but not all, specifically included courses for on-campus students wanting online education.

Looking at the most visible and generic statements of the missions of those 22 university programs, it appeared that many had settled on specific kind of language for describing what they do and others used a variety of metaphors. Those 22 universities used 39 different metaphors for distance learning.
By my count, four of those universities (18%) used the language of “extend” or “extension”; 10 (45%) used the terms “outreach” or “reach out”; two (9%) used “arm”; 13 (59%) used “continuing”; and 12 (54%) used “distance” somewhere in their statements. Most of the universities also used the language of “providing” or “offering” which aligns them more closely with traditional academic departments that offer degrees and provide “learning opportunities.” This would indicate to me that these divisions and departments are purposely avoiding the connotations that come with extension and distance education. The percentages also speak to the problem of the lack of consensus in the terms being used. The question that follows is whether the fragmentation of terms also means incongruous educational philosophies and thus a great number of different versions of what distance education means (and thus lack of guidance for distance librarians seeking to support those various versions).

The four most-often used metaphorical terms, though, tend to be extension, outreach, continuing, and distance. The first two, extension and outreach, are much more oriented toward what the university does for students, as actions taken by the university. Extension and outreach are in direct opposition to that other metaphor of the university, the ivory tower, where scholars remain isolated and separate from the real world. Extension as a metaphor is closely connected to the term “arm” that two universities specifically used. If the university is an entity with arms or some other kind of appendage that can extend the body of the university outward, then the distance education program as an extension sees the university as an octopus with tentacles, which allows the distance education program to still be part of the main body of the university. There is also a limit to how far an arm can reach, however, before becoming a different kind of program, such as an international program. Interestingly, none of the universities I studied used the term “satellite” or “branch,” even when other campus locations were listed.

Equally active is the metaphor of outreach, which also brings the organic source domain of arms and hands. Reaching, however, includes a sense of goal for that reach: I may extend my arm, but when I reach, I reach for something. The common phrase “reaching one’s goals” is a good example of the source domain of physical reach mapped onto the target domain of mental goals. Outreach has a long history of being associated with church and health care programs, assistance programs for the needy, and apprenticeships and internships. Companies and service providers conduct “outreach” programs to increase their impact on a new or larger patron groups. In my library, the outreach librarian has the job of developing lecture series and other activities that attract people who would not otherwise come to the library. This, of course, is one of the terminology problems with distance library services: the university’s sense of outreach is different from the library’s sense of outreach, so that the university Division of Outreach includes distance learning while the library’s outreach programs may not. In general, then the metaphor of “outreach,” particularly because of its nominalization, doesn’t indicate much about the objects of the reaching.

“Continuing” as a descriptive term for distance education has a long history as well. Many, if not most, extension programs at American universities in the early part of this century were conceived of as programs for those who were not going to college (Berg, 2002). Continuing education meant what we call “lifelong learning” today, the kind of learning that improves and enriches one’s life, makes one a better worker or parent or citizen, but doesn’t lead to a degree. Other important continuing education programs are still conceived of as professional education or post-baccalaureate programs leading to certificates or masters degrees or PhDs. Many current distance education programs are too diverse to be called continuing education programs alone. However, the positive connotations with the metaphor of continuing is that learning is a more of a journey, something that doesn’t have a stopping point, such as the “continuing saga” of a soap opera.

“Distance” education and distance learning emphasize the spatial issues. Indeed, many students in these programs do live at a distance from campus, making it difficult or impossible to use campus services face-to-face. The metaphor of distance in distance education, thus, is pretty subtle since it has a direct physical basis. However, there are specific connotations with the word that cause problems of “there-ness” for distance learning. For instance, we talk about things “in the distance,” assigning a far away space, instead of implying a flexible measurement. A person who is labeled “distant” is aloof or day-dreaming. My “distant relatives” are ones I don’t know well, but my “extended family” is simply large and connected. Geographer and philosopher of space Tuan (1977) points out that distance “connotes degrees of
accessibility and also of concern” (p. 46). We keep track of who is important to us and register their closeness or distance from us. People and things farther away from us are less important. In fact, humans define space in terms of the self, according to Tuan, as evidenced by the importance of distance from self in other languages. In English we carry this over to personal pronouns. Tuan writes, “We are here . . . They are there; they are not fully human and they live in that place” (p. 50). Tuan also points out that distance has a timeless quality, such as when we set legends and science fiction in locations “a long time ago in a place far, far away.” But this timeless quality allows distance to create a sense of a historicity as well. Maps, Tuan says, are objective and timeless, generating the feeling that those places remain untouched by history. For a distance education program, these are not positive connections. The less we see and understand those students up close and personal, the more we tend to assume they haven’t changed, have the same needs from year to year, and that the landscape of their education hasn’t changed. Sometimes it’s as if they live on a frontier, a wild and free space but perilous and risky. In the metaphor of the Wild West, if a student falls down a ravine, there’s no one within miles to help and plenty of rattlesnakes in that ravine. Isolated distance students don’t have the safety net of a face-to-face reference desk, a quiet study space, or 24-hour chat service when they run into problems.

The other problem with the term “distance” is that it falls into the root metaphor of machine-based educational philosophy. Álvarez and Kilbourn (2002) use Stephen Pepper’s theory of cognitive models or root metaphors to describe basic categories of thinking that influence our models for education. Pepper posits four main root metaphors: form, machine, organ, and context. The root metaphor of form uses similarities and differences and emphasizes essential models and types of things. The machine metaphor emphasizes cause and effect as well as the reality of time and location. Metaphors of organ or organisms stress connections and integration, while metaphors of context stress the here and now and therefore emphasize change and the relativity of experience. When distance education programs talk about delivery of learning modules and describe “access” as a thing that can be given and received, we can clearly see the root metaphor of machine. The delivery metaphor implies, at best, a neutral tool, generally internet technology, which only makes education possible but doesn’t influence education itself. On distance education websites, it’s rare to see the more organic language of connections and community or the formist category of models or comparative pedagogies. Álvarez and Kilbourn apply these root metaphors to the language of “information society” literature but they arrive at a similar conclusion as I did above when looking at the disparate terms used for distance education among the 22 university websites in my study. Álvarez and Kilbourn point out that this fragmentation makes it easy for a learner, particularly a new student, to “lose the way” through the material.

Critiquing educational endeavors because of their machine-like tendencies is hardly a new activity. Garrison and Anderson (1999) cite the pressures to increase access but decrease costs as a heavy influence on a mechanized, industrial model of education where students are passive recipients of what instructors give them. However, they believe that, particularly for research institutions, the drive to create knowledge requires collaboration and communication in a community of scholars and students. The emphasis of many distance education programs to increase the independence of students is a convenience that “comes at the cost of severely reducing interaction and increasing learner isolation” (p. 52).

One of the things that made my informal study even less clear, however, was that at least one-fourth of the websites about distance learning were directed specifically at students and were a form of persuasion as much as information. So some websites say things such as “Welcome, Future Aggies!” and “Find out if distance education is right for you!” If we look at the language used to describe the recipients of distance learning, there are three main trends:

- Most distance learners are hyphenated (off-campus, non-traditional, main campus-branch as in the University of Mississippi-Tupelo); or
- they are disabled in some way and described with some kind of deficit (can’t come to campus, don’t learn well in traditional classrooms); and/or
- most of the programs that did describe students assumed students want or require convenience and flexibility more than anything else.
Of the 22 websites I studied, four (18%) used the term non-traditional; four (18%) described students as unable to do something; only one used the term “off-campus”; four (18%) used the word “outside” to describe students wanting or needing to learn outside of traditional classrooms, and four (18%) described their programs as available to students either on their own time or “anywhere, anytime.” The language of off, outside, and can’t are not positive matters for distance learning, because they reinforce the already strong “outsider” language in so many programs. The other attempt to market programs by playing up the “anytime, anywhere” aspect of distance education is either a step in the right direction by emphasizing the abilities rather than the disabilities of students, but it also seems irresponsible to encourage students to see distance education as something as accessible and easy-answer as surfing the internet.

These are metaphors of difference, and Meyer (2005) says they encourage us to avoid certain questions about distance education, namely whether the technology is the only important difference or whether students are truly becoming educated (p. 1620). Meyer feels that using the metaphor of distance creates a separation of the program from disciplinary bases and a separation of faculty from students, making it very easy to equate the technology (such as course management systems) with learning, rather than the teaching method with evidence of student learning (p. 1619). For distance library services, the resulting tendency is to put a new technology into place (a chat room, for instance) and then imagine we have done our work with reaching out to distance learners.

Spatial Metaphors and Redefining Library Services

By examining these distance education metaphors, a matrix of meanings and possibilities emerges with which to examine the focuses and goals of distance education programs and how libraries work within them. Meyer (2005) describes why metaphors are worth studying:

With an appreciation for metaphors, we can be less controlled by language that dictates our understandings and molds our perceptions and choose to use other metaphors (or at minimum, we will not be captive to our metaphorical language). We can command our metaphors and not let this tool of perception and understandings dictate the views of its user. We can be more aware of the source of others’ misperceptions, the metaphors that control their beliefs, and be better able to understand their unquestioned attitudes (and appreciate how difficult it may be to change those beliefs) (p. 1623).

Meyer advocates dropping “distance” and simply calling it “education,” which is worth considering, even if it simply prompts us to use the term less often and only when necessary to avoid confusion.

The problem of distance also goes beyond the metaphorical. While librarians are not moral philosophers, there is a moral dilemma involved in distance education. Because distance learners are not nearby, are less likely to call us, and won’t show up at the reference desk, we intuitively have looser ties to them. Moral philosophers remind us that distance matters to our sense of whom we are morally required to help, to point of being relative, even though we know it shouldn’t (Kamm, 2004). We are more likely to help a family member than a stranger, and we are more likely to help a nearby stranger than a far-away one. Consider that it feels much better to contribute to our local literacy program than one in Africa or India; or at least one doesn’t feel right contributing to a literacy program overseas but not one’s hometown’s literacy program which also may be struggling. It is simply harder to care as much about distant students as those who come through our doors, because the distance learners don’t have the “presence” and the resulting force of need as other students. Being fully committed to contributing equal resources to distance learners, as well as on-campus learners, means conceiving of what would constitute equal treatment for both distance and on-campus patrons. Equal resources for distance learners may mean more of some services in addition to special services. For instance, a library may clearly see the need to mail books to distance learners as a special service, but not so clearly see the need for longer chat room hours or weekend email answering.

Some of the questions raised by both the moral dilemma and the metaphorical dilemmas are these: (a) should the distance learning library simply become the online library?; (b) are distance learning library
services mechanical and administrative matters rather than organic, instructional matters?; (c) how necessary is it that libraries follow the language, and thus the distance education model, of the university?; (d) if the university doesn’t call it “distance education,” then should the library?; (e) are we letting disciplinary differences get in the way or are we just demanding the more accurate term be used?; (f) are libraries causing confusion for distance learning students or creating true library instruction?; and (g) are we still following the industrialized model of education from earlier in this century or creating new dialogue-based interactions with students through library instruction? Libraries need to avoid the fragmentation caused by multiple metaphors, and yet use the power of hybrid terms and fluid definitions to strengthen services to students. We aren’t going to change the term “distance learning,” but we can realize that that’s not the only way to talk about our students and what we do as distance librarians.
References


Taking Library 2.0 to the Next Level: Using a Course Wiki for Teaching Information Literacy to Honors Students

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Abstract
How do educators capitalize on students' comfort with ubiquitous communications in order to develop information literacy skills required in the 21st century? A curriculum materials librarian and a professor in the School of Education present an approach that uses library instruction, online research scaffolds, and peer evaluation within a class wiki to enhance student research practices and academic achievement. The explosion of information sources and access to networked technologies has provided the opportunity to "ratchet up" the expectations for student research in higher education. The Association of College & Research Libraries' information literacy standards for higher education provide a framework for setting these expectations. The authors describe features of an introductory education course that seek to enhance honors freshman students' knowledge of library research resources, efficient research skills, and scholarly writing, as described in these standards.

Introduction
Growing access to information has raised the bar on the information literacy skills that students are expected to develop early in their undergraduate careers. New online tools such as wikis provide a collaborative setting for authentic research, analysis, and knowledge building, but the technology alone will not support all students in attaining the needed information literacy expertise. There is little research on the pedagogical supports that can be used with Web 2.0 tools that make them effective for learners. This chapter describes research done by a librarian and a professor to develop effective pedagogical constructs to design and integrate library instruction with a Web 2.0 learning environment to teach information literacy skills to education honors freshmen.

Essential Learning Outcomes for 21st Century

In addition to content knowledge, advances in information technology have “raised the bar” regarding how students should access, synthesize, and apply information. The Conference Board et al.(2006) has identified in its report, Are they really ready to work? Employers’ perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce, the core applied skills required by employers in the 21st century. Among these are critical thinking and problem solving, oral and written communication, information technology application, creativity and innovation, and ethics and social responsibility.

To address the needs of 21st century learners, the American Association of Colleges and Universities (AAC&U) published College Learning for the New Global Century, a report from the National Leadership Council for Liberal Education and America's Promise (2007). At the heart of the Council’s educational framework are the Essential Learning Outcomes for the 21st Century which include knowledge of human cultures and the physical and natural world, intellectual and practical skills, personal and social responsibility, and integrative learning. Information literacy is one of the intellectual and practical skills.
21st Century Information Literacy Skills

Information literacy fluency, as the foundation for acquiring core knowledge and essential applied skills, has an essential role in succeeding in the 21st century workforce. Nicholson, Baker & McCann (2009) place information fluency first among fluencies followed by media fluency, numeracy fluency, business and economic fluency, scientific fluency, multicultural fluency, and geospatial fluency, which are essential 21st century skills. One of the factors impacting 21st century teaching and learning is the "shrinking half-life of knowledge" (Gonzalez, 2004, para. 1) where the amount of knowledge is doubling every 18 months, according to the American Society of Training and Documentation (ASTD). "Know-where" supplements "know-how" and "know-what" and the ability to "form connections between sources of information", recognize patterns, and "create useful information" is a much needed skill in the current knowledge economy (Siemens, 2004, An Alternative Theory section, para. 4). The complexity and fleeting nature of knowledge requires higher education faculty and librarians to develop approaches that provide students with authentic settings to learn and apply sophisticated research strategies.

Addressing the Information Needs of the Net Generation

It is becoming apparent to faculty across the country that students entering college now have unique strengths and weaknesses brought on by the roles that technology plays in their lives. Coleman (2009) argues that the Net Generation includes Generation X and the Millenials, or Generation Y. Generation X students, born in the late 1960s and 1970s, are independent thinkers; information seekers; prefer to manage their own time and solve their own problems; and value feedback and quick pieces of information. The Millenials, born between 1980 and 2000, "are the first entirely tech savvy generation to enter the workplace" and favor frequent and systematic feedback (Coleman, 2009, p. 225), and, because of their high level of comfort working with computers, might overestimate their search and information evaluation abilities (Manuel, 2002).

Information literacy instruction has to address the information needs of the Net Generation which rejects the linear approach to research, prefers dynamic learning environments, concise "practical" information handed to them, and expects to receive personalized educational experiences (Bodi, 2002; Cannon, 1991). Consequently, librarians "need to spend more time in distilling information into neat, ready-to-use packages" (Cannon, 1991, p. 36) and design information literacy instruction to address the Net Generation’s information needs and learning styles such as personalized instruction; active learning; and short, concise, practical information (Costello, 2004). The project described integrates face-to-face library instruction; online support; and a collaborative research/writing/peer-review cycle to provide an authentic setting for student research and writing.

Institutional Context

Introduction to Education (EDC 102) is a popular freshman level course offered at the University of Rhode Island that meets both the university’s General Education requirements and the requirements for students considering Education as a major. There are typically up to ten sections of the course taught every semester, each containing around thirty students. In many of the sections, students’ work is organized around two major course projects, the Educational Context Report (CR) and an Issues in American Education policy paper. This chapter describes a project that was piloted in the Honors section of the course. The Honors section had fifteen students. Students in the university’s Honors program have distinguished themselves as successful students.

The education librarian and the professor used the opportunity of teaching the Honors section to collaborate to design a course research project that assists freshmen honors students with developing high quality information literacy skills by incorporating research scaffolds, peer editing, and collaborative writing into library instruction situated in a Web 2.0 world. A course wiki provided the virtual space for communication, collaboration, research, writing, teaching and learning.
Using Web 2.0 Tools to Teach Information Literacy

Educators who use technology to teach are excited by the possibilities of the evolving Internet. Defined by Tim O'Reilly, Web 2.0 describes the second generation of the World Wide Web “moving from a stagnant Web 1.0 to a user-driven, collaborative, participatory, and personalized Web” (Sodt & Summey, 2009, p. 98). Web 2.0 uses the power of the web as platform to harness collective intelligence (O'Reilly, 2005). Some of the Web 2.0 applications are blogs, wikis, podcasts, RSS feeds, social networking, or virtual networking through Second Life.

Librarians are also interested in how new technologies may be changing what libraries do. The term “Library 2.0” was first used by Michael Casey and is defined as a user-centered environment which uses Web 2.0 tools to facilitate learning, content creation, and community building. Library 2.0 provides a dynamic environment, combines physical and virtual spaces and services, and focuses on user information needs and diverse learning styles (Sodt & Summey, 2009, p. 98). Allowing open and equal communication, Library 2.0 “encourages participation, wants to empower users, and represents a major power shift in content creation” (Ojala, 2007, p. 5).

This chapter’s focus is on presenting the collaborative research done by the librarian and the professor in the context of a blended learning model; utilizing the most effective pedagogical constructs for using Web 2.0 tools to build upon students’ online search abilities and to strengthen their academic research skills; and supporting the use of high quality library resources to research, synthesize, write, and present about educational contexts and issues.

Theoretical Frame

Though Web 2.0 applications hold great potential as tools for learning, it is important to design supports for learning that meet students’ needs using a consistent theoretical framework. This section describes the information literacy standards and some of the research-based learning theories that were used for designing instruction and developing teaching materials and learning activities.

ACRL Information Literacy Standards

The Association of College & Research Libraries’ (ACRL) Information Literacy Competency Standards for Higher Education – which defines the characteristics, performance indicators and learning outcomes of an information literate student – provided the theoretical foundation for the project. ACRL standards describe an information literate student as one who can determine the extent of information needed; access information efficiently; evaluate information critically; use information effectively; and understand the economic, legal, and social issues related to information. These standards suggest that students should be able to access reliable, sophisticated representations of information and then utilize these representations in new contexts (ACRL, 2000).

The Backward Design of Instruction

The Backward Design is a model of instructional design organized around big ideas and essential questions. It starts by establishing meaningful learning outcomes and maps instructional activities which guide and assist students to achieve desired results (Wiggins & McTighe, 2005). “The goal of using the backward design of instruction method is to build deep, enduring understandings, to help students connect facts, transfer knowledge and skills, and provide evidence of being able to transfer and apply acquired knowledge to new contexts. A student understands when he/she can explain, interpret, apply, have perspective, empathize, and have self-knowledge, which are the seven facets of understanding” (Wiggins & McTighe, 2005, p. 84). The backward design method has three stages: deciding on desired results, developing accepted evidence of learning, and planning instruction and learning experiences that help students represent their understanding at a satisfactory level.
**Scaffolding Learning and Writing to Learn**

Vygotsky’s Zone of Proximal Development theory describes the use of temporary supports or “scaffolds” to guide and support learners during the learning process and to assist them with efficiently completing more complex tasks independently. For the CR project, data tables were created to support students as they tried to understand large amounts of school data. In addition to these pre-made wiki templates, students also had access to exemplar CR reports from previous years inside the class wiki (Vygotsky, 1978).

Emig (1977) defines learning as the “re-organization or confirmation of a cognitive scheme in light of an experience” (p. 124) and states that “writing as process-and-product possesses a cluster of attributes that correspond uniquely to certain powerful learning strategies” (p. 122). The writing process involves both hemispheres of the brain and supports re-enforcement and feedback, attributes of successful learning. The CR required the students to write about the communities, districts, and then a specific school. This year’s students were required to analyze different schools than students in past years had reported on so that their work constituted a unique contribution to the class wiki.

**Wiki-centric Blended Learning**

Wikis are editable websites that provide a collaborative environment which nurtures students' motivation, new competencies such as reflective thinking and social skills, and collaborative construction of knowledge. Wikis “transform students' general reactive attitudes into (re)creative ones” and develop the “conception of people working in a collective network” (Fainholc, 2009, p. 346). Faculty can use wikis to disseminate knowledge but also to facilitate active learning by designing "collaborative activities, reflective assignments, individual and group problem solving and challenging and innovative assessment projects and assignments." (Hura, 2008, p. 421)

Efforts to design courses that use Web 2.0 tools are just beginning. Using a blended learning model, Cubric (2007) presented a framework for using a wiki to support learning and teaching at the University of Hertfordshire Business School. Jones (2007) describes the role of wikis during the first stages of the information lifecycle for researching previously difficult-to-find current information, and also argues about the power of wikis for building fluency in the higher-order thinking skills such as analysis, evaluation, and creation of new information. For the CR project, the class wiki was used to organize each class meeting, as a shared workspace for the students, and as a repository for instructions, video-based tutorials and other supports for students’ work.

**Project Description**

The course was organized around a sequence of collaborative projects, each requiring students to work in small groups and engage in different types of online research. The CR required students to use public data to describe a school, its district, and its surrounding community. The CR is an assignment used across all ten sections of EDC 102 with learning goals that include accessing and making sense of school and community data to characterize local educational settings. The Honors version of the CR project was designed to address the needs of the honors students. In addition to strengthening their online research skills, project elements to deepen their writing and collaboration skills and to provide an authentic setting for their research were introduced. The project's activities are represented in Figure 1.
Students worked in groups to research three aspects of an educational context, i.e., a geographical community, a school district, and a particular school in the district. The first three weeks of the project were spent researching and describing each educational context. At each stage of their descriptions (community, district, or school) students met to discuss what types of information would be useful to characterize the context level and then met in the library for instruction on how to locate and interpret this information. After each library session, each student was expected to contribute a specific portion of the research on the class wiki. After everyone completed their portion of the research, students worked in groups to synthesize their results to describe an element of their group's educational context.
After their context research was complete, students took steps to publish their reports. During the fourth week while students were working individually on their school descriptions, all of the context elements were linked together on the wiki to form complete reports. During the fifth week, students worked in pairs to review each other's school descriptions. Reports could be published, (i.e., copied from the course private wikispace to a public wikispace) once a change list was completed and an editor "signed off" that the report represented creditable work. After each student successfully made their report public, the descriptions of the communities and districts to examine how the different districts financed their schools and provided services to their students were used.

Each of these unique elements was supported by Web 2.0 technologies designed for particular purposes. In this section, the features that were developed and the Web 2.0 technologies that were incorporated to help address students learning goals are described.

**Collaborative Research**

A key difference in the honors version of the CR was its reliance on collaboration during the research phase. Previous experience with high performing students has suggested that they often disdain "group work" because they often feel like they will bear an unfair burden of the group's work. In the other sections of the course the CR is an individual assignment, with each student researching their own school, district, and community.

The authors chose to have honors students focus on schools in a few districts so that they could research the shared elements of the reports collaboratively. Instead of working individually, students worked in pairs and analyzed data on different aspects of the district and community. For example, if a district was comprised of several zip codes, students would choose one of these zip codes and work with a partner to describe this area, following the example discussed in the library session to investigate various demographic variables.

Students were asked to do all of their work in the class wiki, and supported the different research tasks with pre-made wiki templates pages customized for working with the data sources that needed to be included in their reports. Each template included a data table that students could use to extract data from a particular source and a prompt to help students write a descriptive paragraph based on this data. The data tables often provided spaces to include data to make comparisons, for example, with state or national averages, and students were shown how to make assertions about their report topics based on comparisons with these averages. The work of each research team was immediately available to everyone working on a particular report segment. The "history" feature of the wikispace allowed everyone to know when contributions were made and by whom. The authors hoped that in a class of high-performers, the realization that everyone depended on each member making a contribution would serve as an authentic incentive to contribute to the overall effort.

**Description of Library Instruction**

The library instruction focused on four sets of information literacy skills. The students were expected to be able to find relevant information resources on the U. S. Census, Rhode Island Kidscount, and Rhode Island Information Works websites, to analyze and interpret data, to write a context statement report, and to document the outside sources of information used. These skills address the ACRL’s standards and performance indicators 2.2, 2.3, 2.4, and 5.3, which state that the information literate student constructs and implements efficiently designed search strategies, refines search strategy if necessary, efficiently retrieves information online, and acknowledges the use of information resources (ACRL, 2000).

Students were required to use the data tables provided by the librarian as library scaffolds in order to write partial descriptive statements about the community, the district, and the school that they researched and address essential questions such as how poverty, race, non-English speaking background, or special learning needs impact education. The statements needed to be organized and connected into a final context report that would answer the big question about how social and economic conditions impact education and
During the first face-to-face library session the librarian modeled the use of data tables (see Figure 2) for collecting information on the community and child well-being from the US Census and Rhode Island Kids Count websites. During the second library session the librarian demonstrated collecting information and making logical connections between sets of data on school districts from Rhode Island Information Works website. The data tables provided by the librarian for data collection had fewer examples and more spaces for independent data collection and interpretation. During the third library session the librarian guided student through searches, collection of data, and data sets comparison on individual schools and SALT Reports from Rhode Island Information Works website. No data tables were provided and students had to collect and interpret data based on the research skills acquired in previous library sessions.

### Descriptive Statement Example

**Income/Poverty Data Table**

<table>
<thead>
<tr>
<th></th>
<th>Barrington</th>
<th>Rhode Island</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median household income</td>
<td>$74,591</td>
<td>$51,814</td>
<td>$48,451</td>
</tr>
<tr>
<td>Median family income</td>
<td>$84,657</td>
<td>$64,733</td>
<td>$58,526</td>
</tr>
<tr>
<td>Per capita income</td>
<td>$35,881</td>
<td>$25,937</td>
<td>$25,267</td>
</tr>
<tr>
<td>Families below poverty level</td>
<td>142 families</td>
<td>7.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Individuals below poverty level</td>
<td>566</td>
<td>11.1%</td>
<td>12.4%</td>
</tr>
</tbody>
</table>

Statement example:

Barrington is a relatively affluent community. In 2000 the median household income ($74,591) is higher than the state median household income ($51,814) and higher than US median household income ($48,451). The median family income ($84,657) is higher than the state median family income ($64,733) and higher than US median family income ($58,526). The per capita income ($35,881) is also higher than the state per capita income ($25,937) and higher than US per capita income ($25,267).

Barrington has 142 families that are under the poverty level.

Barrington’s percentage of families below the poverty level (3%) is lower than the state percentage of families below poverty level (7.8%) and lower than US percentage of families below poverty level (9.2%).

The percentage of individuals below poverty level in Barrington (3.4%) is lower than the state percentage of individuals below poverty level (11.1%) and lower than US percentage of individuals below poverty level (12.4%).

*Figure 2.* Library scaffold for income/poverty data collection and example of descriptive statement.

**Writing to Learn**

The honors section of EDC 102 is populated freshmen who distinguished themselves in high school or upperclassmen that have been successful in the honors program. To provide a meaningful
learning experience for freshmen who often find themselves in large introductory sections in their other courses, students were given an opportunity to write as a learning experience. For their context reports, students were asked to research communities, districts, and a school by locating and distilling data on key indicators and write about these topics using this information.

The student writing process was supported by a variety of tools. Before starting the context report project, students practiced writing in the course wikispace as well as using Google Docs. Though the wiki allowed the faculty and librarian to represent the project as a systematic research project, with pages for each section of each report, students also learned that, because wikis generally do not support authors working on the same text simultaneously, it might be necessary sometimes to work in Google Docs and transfer their work to the wiki. In addition to the two writing tools, students also installed Zotero in their Firefox browser to manage bibliographic citations. Students were taught how to use Zotero to select a bibliographic style, build a collection of bibliographic references, and incorporate the resulting citations when they wrote online.

**Authentic Purpose/Creative Outlet**

To provide a compelling context for researching area schools, the authors decided that it was important to provide students with an authentic purpose for their report and a challenge that would warrant them thinking about how to represent their research in a creative way. Fried (2001) suggests that students are more likely to engage their creative efforts if they are asked to solve a problem or develop an artifact that has a meaning outside of the classroom.

The authors decided to give students the option of publishing their context report online. Though the authors planned that students would write their context reports in the wikispace that was shared by several courses, they did not think that this constituted an authentic audience for honors students' reports. The authors decided to provide students with a graded option to publish their work publically online. To earn full credit on their context reports, each student would have to review a classmate's report to suggest revisions that would make it worthy of being published, and revise their own reports based on their own peer-review. Though publishing their report was optional, a portion of their report's grade depended on this step so that students understood from the outset that this was an expectation of the highest performing students.

The course wiki played an important role in this process. A dual-wikispace arrangement supported by a peer-review sequence to facilitate students reviewing and revising each context report segment was used. This process is represented in Figure 1 by a permeable boundary between our class wiki and a public wiki. Though wikis are good for collaborative writing, it did not seem very realistic that students would develop their drafts in public. Instead, the authors took the approach of using the class wikispace as a "copyroom," or area for developing drafts and reviewing each other's work. To be published, a draft had to be reviewed by a peer who was responsible for developing a "punch list" of required revisions. Eventually, each context report segment was published by transferring the final version from the private class wiki to a wikispace that was publicly viewable.

**Student Survey Results**

After the course was completed, students were asked in a survey to provide feedback on the degree they found different features of the course helpful in their learning. Their responses regarding the library instruction and writing activities are summarized (see Table 1).
Table 1

Course Evaluation Items Related to Context Report Elements

<table>
<thead>
<tr>
<th></th>
<th>Not Useful</th>
<th>Only Slightly Useful</th>
<th>Not Sure</th>
<th>Useful</th>
<th>Very Useful</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Library instruction helped me with my research</strong></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
<td>67% (10)</td>
<td>4.67</td>
</tr>
<tr>
<td><strong>Data tables on research pages helped me with my research</strong></td>
<td>0%</td>
<td>0%</td>
<td>7%</td>
<td>40%</td>
<td>53%</td>
<td>4.47</td>
</tr>
<tr>
<td><strong>Writing the Context Report helped me understand schools</strong></td>
<td>0%</td>
<td>0%</td>
<td>7%</td>
<td>33%</td>
<td>60%</td>
<td>4.53</td>
</tr>
<tr>
<td><strong>Context report activities extended my collaboration skills</strong></td>
<td>0%</td>
<td>7%</td>
<td>13%</td>
<td>53%</td>
<td>27%</td>
<td>4.00</td>
</tr>
<tr>
<td><strong>Context report activities helped me extend my research skills</strong></td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
<td>40%</td>
<td>47%</td>
<td>4.33</td>
</tr>
<tr>
<td><strong>Context Report helped me understand American public education</strong></td>
<td>0%</td>
<td>27%</td>
<td>13%</td>
<td>47%</td>
<td>13%</td>
<td>3.47</td>
</tr>
<tr>
<td></td>
<td>Total Responses</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Library Instruction and Research Scaffolds**

All of the students indicated that they found the library sessions useful (33%) or very useful (67%). In addition, all but one of the students valued the research scaffolds (i.e., the data tables and writing prompts) with 40% finding them useful and 53% finding them very useful. In regard to the usefulness of the class activities used for enhancing research skills, 86.6% of the students found the class activities very useful or useful and 13.33% were not sure. Their responses to the survey suggest that the students highly valued the library instruction and the online research supports.

**Writing to Learn and Collaboration**

All but one of the students agreed that writing the Context Report helped them learn about schools. Most of the students (60%) found the writing assignments very useful, with 33% finding the writing useful. One student (7%) was not sure. Most of the students (80%) found the collaborative research activities useful, while 20% found them either only slightly useful or unsure. Students were less confident about the Context Report as a way to understand the American education system in general, with only 60% indicating that it was useful or very useful, and 40% indicating that they weren't sure or found the CR only slightly useful. In general, students found the writing they did for the context report most useful for learning about schools and districts that they studied, but also saw value in the reports for understanding the education system more broadly.
Comfort with Web 2.0 Tools

Students were also asked to estimate their comfort level using various technological tools. Their answers after the course were compared with their answers to the same questions before the class began. The students' responses are summarized (see Table 2). On a scale ranging from 1 (never used) to 5 (used extensively), the average comfort level for using a collaborative word processor increased from 2.3 to 4.0 (73%). Students were also more comfortable using an online citation manager, with the average response increasing 151%, from 1.8 before the course to 4.5 after the course. Students also felt more comfortable using RSS feeds (+59%) and social bookmarking (+50%). Overall, the students' responses indicated they became more comfortable with Web 2.0 tools over the semester.

Table 2

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Pre-Course Survey Average</th>
<th>Post-Course Survey Average</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort with collaborative word processor, e.g. Google Docs.</td>
<td>2.3</td>
<td>4.0</td>
<td>+71%</td>
</tr>
<tr>
<td>Comfort with an online citation manager, e.g. Zotero.</td>
<td>1.8</td>
<td>4.5</td>
<td>+151%</td>
</tr>
<tr>
<td>Comfort with an RSS reader, e.g. Google Reader</td>
<td>1.1</td>
<td>1.8</td>
<td>+59%</td>
</tr>
<tr>
<td>Comfort with social bookmarking, e.g. Diigo.com</td>
<td>1.1</td>
<td>1.6</td>
<td>+50%</td>
</tr>
<tr>
<td>Number of Respondents</td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Note. 1 = Not used; 2 = Have used with difficulty; 3 = Used occasionally; 4 = Used successfully; 5 = Used extensively to create content.

Discussion

Web 2.0 tools, including wikis and an online citation manager were used to provide honors students with an engaging learning sequence where they could learn and apply research skills to investigate local schools. As students become more dependent on digital sources of information, higher education has a responsibility to provide learning experiences where they can extend their online skills beyond communication and entertainment to include efficient and thorough research, writing, and critical thinking.

Though wikis and other Web 2.0 tools have been touted for their potential for providing these experiences, there are few examples of how these tools can be integrated with instruction. The Educational Context Report project was designed to address course objectives and current information literacy standards.

Similar to Cubric's research (2007), which focused on how the learning activities should be "shaped, planned or enforced" in a wiki (p. 11), the information literacy component of this project used library scaffolds to address areas of "troublesome knowledge" and guide students to select relevant resources among a large amount of information that would assist them formulate meaningful answers to

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essential questions such as how poverty, race, non-English speaking background, or special learning needs impact education. The focus of this research project was on discovering the best pedagogical constructs for using the course wikispace as a teaching, learning, and collaborative learning environment where students conduct research by using scaffolds, integrate scaffolds as part of their writing, evaluate peer work, manipulate knowledge, and refine their writing by using a common working space. The research verified Jones' (2003) findings that, when using wikis as learning spaces, students build a "repository of knowledge", "with the knowledge base growing over time", knowledge base that can be shared and used by future groups in the community of practice (p. 15). This research project also demonstrated the power of wikis to build fluency in the higher-order thinking skills such as analysis, evaluation, and creation of new information, which are core components of information literacy (Jones, 2007).

Conclusion

Research-based learning theories such as Backward Design, Scaffolding, and Writing to Learn can inform and empower the use of new online tools with students. Web 2.0 tools provide opportunities to develop new teaching approaches. The course wiki allowed students to use the online supports during the library sessions and work directly within the project paper under the guidance of the faculty and the librarian. Wikis support collaboration between librarians and faculty and the use of strategies that build and enforce information literacy skills. Web 2.0 technologies open new landscapes in librarianship and empower librarians to blaze new trails and improve information literacy instruction.
References


Fainholc, B. (2009). *WIKI’s applications/appropriation in higher education*. Paper presented at the 25th Annual Conference on Distance Teaching & Learning, Madison, WI.


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Information Seeking Behaviour of the Off-Campus Students at the University of Botswana: A Case of Two Satellite Centres

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Abstract
The focus of this study is on the information seeking behaviour of the off-campus students in two of the seven satellite centres of the Centre for Continuing Education, the outreach arm of the University of Botswana. Although the university deeply committed itself to the project, the university library could not afford to establish branch libraries in all the off-campus centres. With the nearest University branch libraries located some 160 kilometres and 200 kilometres away from the centres of study and only branch offices of the public library available, the findings revealed that the library and information needs of the students were not significantly met. As print source was revealed as their preferred choice of information format, email and the internet sources were not given much priority, even though there was evidence that suggests the students were adequately equipped through the teaching of information skills. Questionnaire and interview tools were used.

Background
The Centre for Continuing Education, University of Botswana is a multi-disciplinary and inter-faculty outreach arm of the university. Being the only public funded university in the country for a long time (the second is just under construction and hopes to have its first cohort of admission in 2011), the University of Botswana has the mandate to engage in improving the quality and quantity of the human resources needed for the development of Botswana. The establishment of the Centre for Continuing Education (CCE) which came into being in 1987 is part of the effort to fulfill the mandate. Structured into two main departments (Distance Education and Extra-Mural and Public Education) the Centre offers credit and non-credit diploma and degree programmes within the framework of lifelong learning. The Centre performs its task through distance education, part-time evening classes, professional development and training programmes, as well as public education outreach and other extension activities. As the lead agency in part-time and distance education at tertiary level in the country, the Centre works in partnership with academic and support departments and units in the university as well as a variety of stakeholders within the country.

One major programme that the department of extra-mural and public education (DEPE) offers is Diploma in Accounting and Business Studies (DABS). Over the years this programme, a three year part-time evening duration course, has gained a wide acceptance throughout the country. It has indeed assumed a dimension to the point that apart from Gaborone and Francistown campuses of the University of Botswana where it operates, the programme also holds on hired premises of either Technical Colleges or Secondary schools in five other locations across the country. These include Lobatse, Jwaneng, Maun, Selebi Phikwe and Mahalapye. The study was on the last two centres. Though a project the university deeply committed itself, it is absolutely difficult if not impossible for the university library to establish its branch in every location where the CCE has its presence. The university library could therefore not put up any physical infrastructures that can be easily used to meet the information needs of its students in all the five satellite campuses including the two centres of this study. Public libraries are the only easily accessible resource or information centre available for the students in the two locations. Every other effort exerted to go into coalition with other institutions to cater for the students in the satellite centres did not yield any positive results. With about 160 kilometres, the nearest university branch library to Selebi Phikwe centre is
the CCE North Library at the Francistown Campus of the university, while the main branch of the university library located some 200 kilometres away is the nearest university library to Mahalapye.

The focus of this study was the information seeking behaviour of the students in two of the off-campus centres of the Centre for Continuing Education. Examining the concept of information seeking behavior, Lokman and Stephanie (2001) perceive it as a broad term, which encompasses the ways individuals articulate their information needs, seek, evaluate, select and use information. Similarly, Kingrey (2002) also sees information seeking as involving the search, retrieval, recognition and application of meaningful content. Wilson and Walsh (1996) probably explain it better in an earlier discourse when they note that at the root of the problem of information-seeking behaviour is the concept of information need. With a branch of the public library in each of the two centres as the only easily accessible library or resource centre to the students, how were they able to meet their information needs? Were they adequately equipped with information skills to enable them access library and information services with confidence? Did they have adequate access to appropriate information sources? As earlier noted, all the endeavor of the university library to obtain assistance from other sources to cater for the information needs of their students in satellite centres seemed unfruitful. Having been so disadvantaged, the students’ information needs may not have been adequately catered for. The consequence of this is that the students may be undergoing their three year diploma course of study in the off-campus (satellite) centres without having to use any library facilities or even receiving the assistance of the library.

In the light of the above and based on the observation from the literature, this study would test one main (H") and seven sub hypotheses (SH). The hypotheses were drawn to enable us provide the right and appropriate answers to the research questions raised for the study. All expressed in the null the hypotheses include:

- Main Hypothesis (H") : The library and information needs of the students in satellite (off) campuses are not significantly adequately met
- Sub-Hypothesis (SH\(^1\)) : The satellite (off) campus students have no significantly preferred information format from print, electronic and Audio-visual formats
- Sub-Hypothesis (SH\(^2\)) : There is no significant difference in the various information sources used to acquire information
- Sub-Hypothesis (SH\(^3\)) : There is no significant information source used by the respondents
- Sub-Hypothesis (SH\(^4\)) : There is no significant procedure for obtaining information needed
- Sub-Hypothesis (SH\(^5\)) : Students do not have adequate access to appropriate information sources
- Sub-Hypothesis (SH\(^6\)) : Public libraries in towns and villages where satellite campuses are located are not significantly effective in meeting the library and information needs of students
- Sub-Hypothesis (SH\(^7\)) : Students are not adequately equipped with information (literacy) skills to enable them access library and information services with confidence

**Research Methodology**

This study focused on the students of the outreach arm of the University of Botswana in Selebi Phikwe and Mahalapye, two of the seven centres of CCE. It was assumed that the findings from the study would be representative of the opinions of the off-campus students in all the five centres of the university where the university library does not have any physical presence. A social survey of a sample of the off-campus students in the two centres was carried out. Altogether, there were a total of 274 students in the two centres. Mahalapye had 124 students and Selebi Phikwe centre had 150 students. For reasons of their
experience in school, the students doing levels two and three of their diploma programme were given consideration in the survey. It was felt that the students in those levels, unlike their level one counter-parts, had written a number of assignments and tests, as well as more than two examinations. It was therefore assumed that the desirability or otherwise of library and information services would be better felt by levels two and three students than level 1 students. In order to be able to compare results, the same number of students in each of the two centres was included on purpose. In this respect, a random sample of 50 students in Level 2 and Level 3 in each centre was used for this study.

With the assistance of the course coordinator in each centre, the researcher personally distributed a total of 100 copies of the questionnaire (50 copies for each centre) to the students who were randomly selected from the list for each centre. This figure constitutes about one third of the total population of the students in the two centres. A total of 80 analyzable responses were received. This represents 80% response rate.

Even though a questionnaire was used as the major data collection instrument, interview was also carried out with some selected students from the two study centres. The purpose of the interview was to seek further clarification of any grey areas or the result of the analysis.

Data were abstracted from the questionnaires and entered into the Statistical Package for Social Sciences (SPSS) for computational analysis. Standard statistics were used, including frequency distributions and percentages, to carry out the analysis. Tables were developed from SPSS package to express the relevant data to the main and sub hypotheses. Cross tabulation and chi-square were made to relate the independent variables under demographic information to the findings and establish or measure possible influence where appropriate. Being a non-parametric test of statistical significance for bivariate tabular analysis that chi-square is, it also helps to determine the degree of confidence to have in accepting or rejecting a hypothesis.

**Findings**

**Main Hypothesis (H₀): The library and information needs of the students in satellite (off) campuses are not significantly adequately met.**

Table 1 presents the result of the inquiry to establish if the library and information needs of the students in the satellite centres were being adequately met or not. Within the limit of the materials or resources available for their use, including public library facilities, the students were asked to indicate whether all, most, some or none of their information needs were met by the resources available. A significant majority (72.5%) of respondents indicated that only some of their information needs were met. Only one respondent (1.3%) indicated that all his/her information needs were met, while another insignificant four respondents said that most of their information needs were met. As shown in Table 1, $X^2 = 103.500$: $p < 0.05$. Going by the established result, the considered view is that the library and information needs of the students in satellite campuses were not met. Hence, the hypothesis is accepted.
Table 1

Meeting Information Needs by Available Resources

<table>
<thead>
<tr>
<th>Valid</th>
<th>All information needs met</th>
<th>Frequency</th>
<th>Percent</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>1.3</td>
<td>103.500</td>
<td>0.001</td>
</tr>
<tr>
<td>Most information needs met</td>
<td></td>
<td>4</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some information needs met</td>
<td></td>
<td>58</td>
<td>72.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No information needs met</td>
<td></td>
<td>17</td>
<td>21.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. p < 0.05

Sub-Hypothesis (SH1): The satellite (off-campus) students have no significantly preferred information format from print, electronic and audio-visual formats

In establishing their most preferred information format from the three options of print, electronic and audio-visual provided, it is clear from Table 2 that a significant majority (71.3%) of the respondents had preference for print format. The significance level of $X^2$ value found was 0.001 which is less than 0.05. The sub-hypothesis that continuing education students have no significantly preferred information format from print, electronic and audio-visual formats is rejected. It is noted that the students have all their lives been used to print as an information format. Besides, print as an information format is easily accessible than other formats. Further, the application of the other two formats involves the use of electricity which may not be significantly available in the homes of some of the students. In addition, the cost of using electronic and audio-visual materials may not be affordable. This assertion was confirmed during the interview when some of the students disclosed that they were not working and therefore could not afford to buy electronic or computer mediated information system. The results reveal that with the common use of electronic and audio-visual formats these days, things have not significantly changed with the students. Probably for reasons of background, cost, environment, poverty or location, print remains the information format of choice to most of the students.

Table 2

Most Preferred Information Format

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Chi-Square ($X^2$)</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>57</td>
<td>71.3</td>
<td>51.775</td>
<td>.001</td>
</tr>
<tr>
<td>Electronic</td>
<td>12</td>
<td>15.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio Visual</td>
<td>11</td>
<td>13.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. p < 0.05
The effort geared toward establishing whether the respondents Level (of study) had any influence on their choice of the most preferred information format showed that it had no significant influence ($X^2 = 3.234; p > 0.05$) (see Table 3).

Table 3

*Most Preferred Information Format According to Level of Students*

<table>
<thead>
<tr>
<th>Most Preferred Information</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Print</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Second Level</td>
<td>30</td>
</tr>
<tr>
<td>Third Level</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

Similarly, the result of the cross tabulation and chi-square to check if location had any significant influence in the respondents’ choice of the most preferred information format produced no significant association. As seen in Table 4, the value of $X^2$ is not significant ($p > 0.05$). Thus we reject the suggestion that either level of study or location had any significant influence on the choice. In other words, the choice of the most preferred information format by the respondents was independent of their location and level (of study).

Table 4

*Most Preferred Information Format by Location*

<table>
<thead>
<tr>
<th>Most Preferred Information</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Print</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>1*</td>
<td>28</td>
</tr>
<tr>
<td>2*</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

Note. 1* = Mahalapye; 2* = Selebi Phikwe.

**Sub-Hypothesis ($SH^2$): There is no significant difference in the various information sources used to acquire information.**

In Table 5, it is palpable that a significant number (90%) of respondents indicated their dependence on Lecturer, followed by Colleagues with 71% as their information sources used. In addition to these two information sources, the value of $X^2$ in a number of areas including Internet, email and telephone is significant ($p$ is less than 0.05). Of the information sources listed, the significantly least used ones are email, Internet and telephone. The reason for this could be as a result of the cost involved in their use and location. Unlike the regular students who can easily walk to the university library to use email and internet.
facilities, students in satellite campuses don’t have such provisions. Mass media like radio and television attracted greater attention than the Internet and email. Evidence obtained from the interview showed that the students listened to radio/television to obtain information on jobs and other opportunities and for academic purposes per se. Essentially, the results obtained here reject the $SH_2$ postulation that there is no significant difference in the various information sources used to acquire information.

Even though the value of $X^2$ in the three information sources discussed earlier lends credence to the sub-hypothesis, such areas where the value of $X^2$ is greater than 0.05 include the use of mass media like radio/television, reference/textbooks and library resources. They are not significant enough to write off the rejection of the $SH_2$ that there is no significant difference in the various information sources used to acquire information. Those who used them were not significantly more than those who did not.

Table 5

**Sources Used to Acquire Information**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Chi-Square ($X^2$)</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Valid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleagues</td>
<td>57</td>
<td>71.3</td>
<td>14.450</td>
<td>.001</td>
</tr>
<tr>
<td>Lecturer</td>
<td>72</td>
<td>90.0</td>
<td>15.200</td>
<td>.001</td>
</tr>
<tr>
<td>Radio/TV</td>
<td>35</td>
<td>43.8</td>
<td>1.250</td>
<td>.264</td>
</tr>
<tr>
<td>Internet</td>
<td>20</td>
<td>25.0</td>
<td>20.000</td>
<td>.001</td>
</tr>
<tr>
<td>Email</td>
<td>8</td>
<td>10.0</td>
<td>51.200</td>
<td>.001</td>
</tr>
<tr>
<td>Telephone</td>
<td>13</td>
<td>16.3</td>
<td>36.450</td>
<td>.001</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>text/books</td>
<td>47</td>
<td>58.8</td>
<td>2.450</td>
<td>.118</td>
</tr>
<tr>
<td>Library Resources</td>
<td>40</td>
<td>50.0</td>
<td>.000</td>
<td>1.000</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>1</td>
<td>1.3</td>
<td>76.050</td>
<td>.001</td>
</tr>
</tbody>
</table>

The study made attempt to establish whether location had any significant influence in the choice of sources. No relationship was found. Virtually all the variables tested showed that the value of $X^2$ in each of them is not significant ($p > 0.05$). The result also rejects any idea that level (of study) could influence the choice of respondents because $p$ is greater than 0.05. Neither location nor level was found to have any significant influence in the various information sources the respondents used to acquire information.

**Sub-Hypothesis ($SH_3$): There is no significant information source used by the respondents.**

As indicated in Table 6, the respondents’ most important information source was “books”. This further confirms the result of $SH_1$ where the majority of the respondents opted for print as their preferred information format. The $X^2$ value is significant here in the sense that $p$ is less than 0.05. Hence, the sub-hypothesis is rejected. Whether they were able to have access to the right and appropriate books was another question. With 33.8%, lecturers were rated as second most important information source. Internet had no adherents yet among the respondents (see Table 6).
Table 6

**Most Important Information Source**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Valid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books</td>
<td>36</td>
<td>45.0</td>
<td>32.700</td>
<td>.001</td>
</tr>
<tr>
<td>Lecturers</td>
<td>27</td>
<td>33.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends and Colleagues</td>
<td>2</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture notes / Handouts</td>
<td>15</td>
<td>18.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The crosstab and chi-square examination of the possibility of level (of study) having any significant influence on the choice of the respondents’ most important information source yielded no significant association ($X^2 = 6.805; p > 0.05$) (see Table 7). Similarly, with $X^2 = 2.006$ and significance level found to be .571, indicating that $p > 0.05$, the location of the respondents had no significant association in the respondents choice of their most important information source (see Table 8).

Table 7

**Most Important Information Source by Level (of Study)**

<table>
<thead>
<tr>
<th></th>
<th>Most Important Information Source</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Books</td>
<td>Lecturers</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Level</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Third Level</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>36</td>
<td>27</td>
</tr>
</tbody>
</table>
Table 8

*Most Important Information Source by Location*

<table>
<thead>
<tr>
<th>Location Code</th>
<th>Books</th>
<th>Lecturers</th>
<th>Friends and Colleagues</th>
<th>Lecture notes/Handout</th>
<th>Total</th>
<th>X^2</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>12</td>
<td>1</td>
<td>10</td>
<td>43</td>
<td>2.006</td>
<td>.571</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>15</td>
<td>1</td>
<td>5</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>27</td>
<td>2</td>
<td>15</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The test conducted using crosstab and chi square to check if age had any influence in the respondents choice of the most important information source also yielded no significant association—neither did gender. In each case, the value of X^2 is not significant. For instance with Age X^2 = 19.270: p > 0.05 (see Table 9) and Gender X^2 = 6.985: p > 0.05 (see Table 10).

Table 9

*Most Important Information Source by Age*

<table>
<thead>
<tr>
<th>Age</th>
<th>Books</th>
<th>Lecturers</th>
<th>Friends and Colleagues</th>
<th>Lecture notes/Handouts</th>
<th>Total</th>
<th>X^2</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>19.270</td>
<td>.082</td>
</tr>
<tr>
<td>21-25</td>
<td>20</td>
<td>11</td>
<td>1</td>
<td>10</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-30</td>
<td>7</td>
<td>10</td>
<td>0</td>
<td>4</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-35</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 and above</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>27</td>
<td>2</td>
<td>15</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 10

Most Important Information Source by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Books</th>
<th>Lecturers</th>
<th>Friends and Colleagues</th>
<th>Lecture notes/ Handouts</th>
<th>Total</th>
<th>(X^2)</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>11</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>22</td>
<td>6.985</td>
<td>.072</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>20</td>
<td>0</td>
<td>13</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>27</td>
<td>2</td>
<td>15</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sub-Hypothesis (SH4): There is no significant procedure for obtaining information needed.

It is clearly indicated from Table 11 below that a significant number (92.5%) of respondents would use their lecture notes to cater for their information needs or obtain the needed information. This was followed by the choice of discussion with colleagues (82.5%). Use of the Internet and listening to radio and television were the least used methods to obtain the needed information. On the whole the \(X^2\) value is significant: p is less than 0.05. As such, this result is at variance to the sub-hypothesis that there is no significant procedure for obtaining information needed; hence, the sub-hypothesis is rejected.

Table 11

Catering for or Obtaining Information Needs

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Chi-square ((X^2))</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use my lecture notes</td>
<td>74</td>
<td>92.5</td>
<td>57.800</td>
</tr>
<tr>
<td>I discuss with colleagues</td>
<td>66</td>
<td>82.5</td>
<td>33.800</td>
</tr>
<tr>
<td>I use the public library</td>
<td>42</td>
<td>52.5</td>
<td>.200</td>
</tr>
<tr>
<td>I use the Internet Café</td>
<td>12</td>
<td>15.0</td>
<td>39.200</td>
</tr>
<tr>
<td>I listen to Radio/television</td>
<td>21</td>
<td>26.3</td>
<td>18.050</td>
</tr>
<tr>
<td>others</td>
<td>3</td>
<td>3.8</td>
<td>68.450</td>
</tr>
</tbody>
</table>

Note. p < 0.05

Sub-Hypothesis (SH5): Students do not have adequate access to appropriate information sources.

Our first attempt at measuring the sub-hypothesis was to test respondents' accessibility to the Internet. From Table 12, only nine respondents said they had access to the Internet facilities; four (5%) had this access only at work on their own machine; three (3.8%) also at work but on shared machine; whilst only two or 2.5% respondents had access to the Internet at home on their own machine. In this case, the \(X^2\)
value is significant: p is less than 0.05. This result subscribes to the sub-hypothesis that students do not have access to appropriate information source; hence, the hypothesis is accepted (see Table 12).

Table 12

**Access to Internet Facilities**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>No</td>
<td>71</td>
<td>88.8</td>
<td>45.000</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>9</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Note. p < 0.05

Table 13 shows a total of 55 (68.8%) (of the 80 respondents) claimed that their attempt to meet their information needs took them to the library. As they indicated the library used, it is not surprising to note that a significant majority (94.5%) of the respondents who claimed to use the library at all actually patronized public library. Public library was the only (major) accessible library to the students in the satellite campuses. Only two (3.6%) respondents said they used UB main library, while another (one) respondent made use of a private library. More than 31% of the respondents, the results showed, did not use any library. As noticed in the table below, the $X^2$ value in this result is significant (p is less than 0.05). This result lends credence to the sub-hypothesis that students do not have adequate access to appropriate information source; hence, this sub-hypothesis is accepted. The result of the attempt to establish how often the respondents visited the library shows that a quarter of them visited the library only once a month, 27.5% visited once a week, whilst only 10% visited more than once a week. The students also confirmed during the interview that they were hesitant in going to the public library because most of the time they did not obtain what was needed there. Further examination on public library used by respondents is shown in SH6. Table 1 under Hm further illustrates the insignificant number of respondents that indicated their information needs were met.

Table 13

**Library Used to Meet Information Needs**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Chi Square ($X^2$)</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Public Library</td>
<td>52</td>
<td>94.5</td>
<td>43.655</td>
</tr>
<tr>
<td></td>
<td>UB Main Library</td>
<td>2</td>
<td>3.6</td>
<td>47.291</td>
</tr>
<tr>
<td></td>
<td>UB Branch Library</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>1</td>
<td>1.8</td>
<td>51.073</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>55</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Note. p < 0.05
The crosstab and chi-square result shows that gender had no significant association with the respondents’ frequency of visit to the library. The $X^2$ value shows that it is not significant: $p > 0.05$

Table 14

Frequency of Visit to the Library by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency of Visit to the Library</th>
<th>Total</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Once a month</td>
<td>Once a week</td>
<td>More than once a week</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>14</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>19</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>

As would have been noticed in main hypothesis ($H^m$), of all information resources available to the respondents, only one respondent indicated that all his/her information needs were met; only four said most of their needs were met; whilst the majority of them (72.5%) said only some of their information needs were met (see Table 1).

**Sub-Hypothesis (SH6): Public libraries in towns and villages where satellite campuses are located are not significantly effective in meeting the library and information needs of students.**

It is noted in the analysis of $SH^6$ that 52 out of 55 respondents that indicated they used library actually patronized the public library. During the interview conducted, a significant 16 of the 21 (76.2%) students interviewed indicated that they were not satisfied with services obtained in the public library, adding that they only patronized (the public library) because they did not have any other library to go. They complained the resources of the library were never useful either in writing any assignment or in preparing for test and examination. As also discussed under the main hypothesis ($H^m$), when asked to indicate whether all, most, some or none of their information needs were met by the resources available to them, a significant majority (72.5%) of respondents indicated that only some of their information needs were met. Only one respondent indicated that all his/her information needs were met, while another insignificant four respondents said that most of their information needs were met. Table 1 shows that $X^2 = 103.500$: $p < 0.05$. Since most of the respondents used public library, this result gives support to the sub-hypothesis and is therefore accepted.

**Sub-Hypothesis (SH7): Students are not adequately equipped with information (literacy) skills to enable them access library and information services with confidence.**

Computing and information (literacy) skills is a mandatory credit earning course for all the students of the University of Botswana especially during their first year of study. The students had been taught their courses on computing and information skills before the questionnaire was administered. As seen in Table 15, a significant majority (80%) of respondents were either poor or fair in the information skills component of the course before they received training, whilst only 20% said they were either good or excellent. After undergoing the training/courses, those who were now good or excellent had significantly risen to 66% (see Table 16); whilst those who were still poor after the course had significantly reduced from 46% to 7.5%. Investigation during the interview revealed that some of those who were still poor could not, for one reason or the other, attend the practical sessions of the course; while some also claimed they...
did not have anywhere to practice what was learnt and were therefore not sure of the depth of the skills acquired. It is however gratifying to note that most of the respondents showed they now had the skill if there was somewhere to practice it. The $X^2$ value, as seen in Tables 15 and 16, is significant: $p$ is less than 0.05. The respondents clearly fall into significantly positively different levels of knowledge and understanding of information (literacy) skills. With these results the sub-hypothesis that students are not adequately equipped with information skills to enable them access library and information services with confidence is rejected.

Table 15

*Information Skills Level Before Programme/Training*

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Poor</td>
<td>37</td>
<td>46.3</td>
<td>33.800</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>27</td>
<td>33.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>13</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td>3</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 16

*Information Skills Level Now*

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>$X^2$</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Poor</td>
<td>6</td>
<td>7.5</td>
<td>35.100</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>21</td>
<td>26.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>41</td>
<td>51.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td>12</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

A cross tabulation and chi-square exercise to test whether the level (of study) of respondents had some significant influence on the findings either before or after the training of computing and information skills course showed no significant association. Either way, the value of $X^2$ is not significant ($p > 0.05$) (see Tables 17 and 18).
Table 17

*Computer and Information Skills Level before Programme:*

<table>
<thead>
<tr>
<th>Level</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
<th>Total</th>
<th>( \chi^2 )</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Level</strong></td>
<td>15</td>
<td>17</td>
<td>6</td>
<td>3</td>
<td>41</td>
<td>10.833</td>
<td>.094</td>
</tr>
<tr>
<td><strong>Third Level</strong></td>
<td>22</td>
<td>10</td>
<td>7</td>
<td>0</td>
<td>39</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>27</td>
<td>13</td>
<td>3</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 18

*Computer and Information Skills Level After Training*

<table>
<thead>
<tr>
<th>Level</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
<th>Total</th>
<th>( \chi^2 )</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Level</strong></td>
<td>3</td>
<td>6</td>
<td>25</td>
<td>7</td>
<td>41</td>
<td>11.220</td>
<td>.082</td>
</tr>
<tr>
<td><strong>Third Level</strong></td>
<td>3</td>
<td>15</td>
<td>16</td>
<td>5</td>
<td>39</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6</td>
<td>21</td>
<td>41</td>
<td>12</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

Devadason and Lingam (1996) affirm that lack of self-sufficiency constitutes information needs in day to day work. These information needs, the duo maintain, represent gaps in the current knowledge of the user. There is sufficient evidence in the study as seen in Table 1 that the information needs of the students were significantly unmet. Wilson (1999) in his model, shows that part of the information-seeking behaviour may involve other people through information exchange and that information perceived as useful may be passed to other people, as well as being used (or instead of being used) by the person himself or herself. Ellis (1993) in his behavioural model of information seeking strategies also argues that communication with other people is a key component in the initial search for information. The “other people” (the off-campus students) were communicating with were not the subject or extension librarians but their fellow classmates or colleagues (second to lecturer and using lecture notes) as seen in Table 5 and Table 11. The students information seeking behaviour only revolved mostly around their colleagues, lecturers and, or lecture notes. It does not sound desirable for the tertiary level students to depend on lecture notes or discuss with colleagues in order to write assignment, test and examination or obtain the needed information. Other options like using the internet or the library should be more viable. All this is an indication that the respondents did not have access to appropriate information sources.

The study found that the respondents significantly preferred information format was print as 71% of respondents indicated in Table 2. Only a relatively insignificant 15% would preferred electronic and
another 14 % audio-visual. This of course is not surprising. Understandably, the students seemed not to be in any haste to change from what they had been used to. Besides for reasons of circumstances surrounding their studies and location, print remains an unbeatable option as information format to them.

One way of equipping students for lifelong learning and to enable them to appropriately use the modern information and communication technology (ICT) to obtain the needed information is the training in computing and information skills. Computing and information skills courses are made compulsory for all the students of the university including the learners in satellite centres. At the time the questionnaire was administered all the students had been taught the two required courses GEC 121 and 122 of computing and information skills. The study revealed that respondents were adequately equipped with information skills to enable them access library and information services with confidence. For instance, before the commencement of their diploma programme 46% of respondents said they were poor in information skills, but after receiving training only 7.5% claimed they were poor, while the number of those who were good had risen from 16% before the training to 51% after the training (see Tables 15 and 18). With training received, the problem foreseen is where and how they were going to practice the knowledge gained. Information obtained during the interview suggests that some of those who were still poor after the training missed some practical sessions, whilst some others who attended all the training were not sure of their knowledge as they did not have a place to practice the knowledge acquired.

In his second model on information seeking behavior, Wilson’s (1981) had a proposition that in the effort to discover information to satisfy a need, the enquirer is likely to meet with barriers (intervening variables) of different kinds. Some questions were raised on this with respondents. Part of the barriers the students indicated were confronting them in their endeavour to satisfy their needs include lack of (adequate) library which constituted the greatest pain to respondents as 55% of them considered it a barrier; lack of time and lack/cost of equipments were regarded as barriers by 50% respondents respectively, while isolation and lack of technological skills were considered barriers by only 15% and 17% of respondents respectively. Possibly for reasons of the training received on computing and information skills, lack of technological skill was not so much regarded a barrier by majority of respondents.

**Conclusion and Recommendations**

The results of the study showed that the respondents’ demographic information including the age, location and level (of study) had no significant impact, influence or association on the results of various findings discussed. The findings revealed that the information needs of the students were largely unmet; possibly for reasons of their background, cost, location or poverty, students have preference for print as information format. In the absence of the right and reliable sources of information to use, the students regrettably survived either on their colleagues or the lecture notes dictated to them in the class as their major sources of information. There was the absence or near absence of library and electronic information sources like the internet and email facilities were not easily accessible even though there was evidence to show that the students were taught computing and information literacy skills. Coupled with the above was a barrage of other factors militating against the students endeavor to satisfy their information needs. Among these include isolation, lack of time, lack and/or cost of equipment as well as lack of technological skill.

In the light of the above inadequacies, and in order to be better assisted, the respondents in their own words offered the following proposals:

- “The University of Botswana Library should ask for a space in the local Public Library, a Secondary School or any school library to keep some materials for our use”
- The University should negotiate access to and/or install computers with Internet facilities for them in a local library
- The University Library or its branch should run mobile library that would visit the satellite centres occasionally”
• The University bookshop should be mobile and visit all University of Botswana locations at specific periods and sell books to off-campus students.”

In addition, the following recommendations are worth considering:

• It is observed that virtually all the hired school premises used for the face-to-face teaching of the students have computing laboratories with internet facilities. The current arrangement which limits the use of the laboratories to teaching the students the computing and information skills course only should be pursued further. A more serious, vigorous and solid arrangement with the institutions should be pursued by the University Library so that its students could have access not only to computer and internet facilities in the hired premises, but also the use of the libraries of the institutions. Understandably, the institutions might not have relevant materials for the university students, it would not pose any difficulty to make provision of relevant materials that can be housed and used on hired premises by the students.

• The mobile library service of some branches of the public library is still in force. Partnering with the public library in the country would therefore be a useful idea if the information needs of the university’s ubiquitous students are to be satisfied.

• The study showed that only an insignificant number of students used email facilities. Encouragement should be given to the students to register for email services. If the university email facility cannot be extended to the off-campus students, there are many free email facilities that are available. Once registered, the extension service librarian should compile the students’ listserv for purposes of easier and mutual communication not only between the students and the librarian, but also among the students themselves.

• It is noted that the lecturers and coordinators in various centres are closer to the students. In this respect, it is recommended that a more dynamic relationship should be established between the university library and the lecturers and coordinators in those centres. The relationship would ensure that not only the information needs of the lecturers are well taken care of, but that through them, advance knowledge on the information needs of the students can be obtained and conscious effort made to satisfy the needs.
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Writing as an Information Literacy Tool: Bringing Writing in the Disciplines to an Online Library Class

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Abstract
The Writing in the Discipline (WID) concepts lend themselves to execution in an online realm, where written communication is the primary means of contact between students and instructors. The author instituted WID in an online section of a one-credit research class and found the WID framework also made it easier for students to demonstrate information literacy. WID provides space within a course for students to become accustomed to the discourse of a discipline, writing to understand before being asked to formally communicate. This paper explains the concepts behind WID and outlines how it was executed within an urban community college online class.

Background
The LaGuardia Community College Library Media Resources Center launched a fully online version of their LRC103: Internet Research Strategies class in Fall 2007. The one-credit class was one of the first fully-online classes at LaGuardia. It quickly became apparent to librarians teaching the class that the online realm requires a lot of writing, since writing was the primary mechanism of communication in a situation where instructors and students never met face-to-face.

The author soon realized if the class was going to make sense to him and his students, he would have to teach writing in addition to research, and so applied to become a participant in LaGuardia’s Writing in the Disciplines (WID) program. This one-year program was designed to help faculty of all disciplines integrate writing into their classes. He was accepted into the program in Fall 2008 and fully integrated the WID principles into his online class in Spring 2009.

Much has been written about the Writing in the Disciplines/Writing Across the Curriculum model of teaching writing, although there does not seem to be much in the library literature dealing with the application of WID to library/research/information literacy classes. The following section is just a small sample of the vast body of literature, designed to give the reader a shared framework from which to work.

Fulwiler (2002) broke down WID into three key concepts:

1. The act of composing a piece of writing is a complex intellectual process.
2. Writing is a mode of learning as well as communicating.
3. People have trouble writing for a variety of reasons.

These concepts were new to the author, who does not have a background in composition. The author focused his WID work on a few specific aspects of these core concepts, emphasized in the LaGuardia training: writing to learn versus writing to communicate, simplified grading, and positive reinforcement.

Young’s work offers a simple-yet-comprehensive explanation of the writing to learn versus writing to communicate concepts:

Writing to learn privileges the learner’s language and values. Writing to communicate privileges the reader’s language and values. The primary goal of writing to learn is to please the writer by
leading to new discoveries, information, perspectives. The primary goal of writing to communicate is to please the reader in providing new discoveries, information, perspectives (1999, p. 11).

Elbow discussed the many benefits of minimal grading, including a time-savings for instructors. However, there are also student learning rewards, too:

Even though minimal grading removes the incentive to strive for an A for excellence...we get to ask students to write far more than if we had to grade everything carefully. We get to ask them to think actively about far more of the course material (1997, p. 128).

Much has been written about the power of praise in terms of helping students learn. It might not be an inextricable part of WID per se, but the author found it very helpful in terms of keeping students invested in the class. Daiker (1989) provided a nice overview of the importance of positive reinforcement in the classroom: “A major cause of writing apprehension is past failure or a perception of past failure; high apprehensives perceive their writing experiences as significantly less successful than low apprehensives” (p. 106). These were the concepts and ideas used to make LRC103 a writing-intensive fully-online class.

LRC103: Internet Research was proposed to the College Curriculum Committee in 2004 as a companion to the Library’s three-credit LRC102: Information Strategies. LRC103’s one-credit structure was designed to make it easier to fit into student schedules. Due to the nature of the class, where various online search tools are studied over the course of the semester, it seemed an excellent candidate to launch as a fully online class in Fall 2007, as one of the College’s first, if not the first, fully online class.

The author and Professor, Scott White, also of the Library, reworked the class content, comparing various subscription collections to the Google-developed counterparts. For example, one week compared LexisNexis Academic to the Google News search. Another week compared Academic Search Premier to Google Scholar. The online class was housed in Blackboard, and class communication took place via email, homework feedback, and within the Blackboard discussion board area.

LRC103 Becomes WIDed

Because LRC103 never met face-to-face, the only communication between student and instructor was through writing. Casual spoken interactions that might have taken seconds in a classroom could become somewhat burdensome written back and forths in the online realm. It became apparent rather quickly in the early iterations of the class that students who were not strong writers would have trouble succeeding in the class – even if they seemed to have a strong enough grasp of the content.

However, more encouragingly, it also became apparent that all of the writing students needed to do to communicate their ideas offered a unique opportunity to understand the information literacy level of the student. In the online realm, students were forced to write about why they were choosing certain articles, and within those explanations, student learning became visible. Obviously, this is possible to do in face-to-face class, too, but for the author, it did not regularly happen, perhaps because the author considered the face-to-face class to be about research and finding, and not about writing.

The quality of student writing could often become a distraction from assessing learning, though. The author’s first instinct was to correct as much as possible, walking students through each and every mistake, both of content and grammar. Grading was also severe in an attempt to quickly get students acclimated to the standards of the class. None of these techniques seemed to work, as some students continued to turn in the same quality of work; some turned in worse work, seeming to have given up; and some students even stopped “attending” the class. It was often possible to see the germs of information literacy in student work, but the work was frequently too raw for the students’ ideas to be fully extracted. As a result of these issues, student progress was monitored with a midterm and final that was multiple-choice with some short essays based upon research scenarios, thus giving the instructor some mechanism to assess student learning without having to work with student writing. Once the author began his WID training, though, it became much easier to see how to guide students through the writing part of the course.
The writing-to-learn concept became especially helpful, as students were given a safe place to express the ideas of the class, without feeling the wrath of pages full of comments and corrections. Each student set up a blog and had their own space in which they could write to learn (with the help of prompts provided by the instructor). Students could write freely and an interesting result emerged from that freedom: they became more comfortable expressing the ideas of the class and their ability to express ideas improved gradually over the course of the semester. Without regular interference from the instructor, student writing had room to grow. Since there were not constant, substantive comments from the instructor, when corrections were given, students seemed more open to considering and implementing the suggestions.

Minimal grading turned out to be more challenging to implement. Because this was a one-credit class, students submitted work once a week. Over the course of a 12-week semester, that meant around 10 homework assignments. In order to assign students a fair grade, pretty much everything had to be formally graded. There simply weren’t very many opportunities for minimal grading. The author’s compromise was to make multi-part assignments, some of which was low-stakes and some of which was formally graded. This way students had enough grades to provide a fair assessment of their work at the end of the semester, without some assignments becoming suddenly high-stakes due to the lack of other formal grades.

As mentioned previously, in the online realm, there are not many opportunities to communicate directly with the students. The temptation was to make the most of the limited opportunities, by giving students as much feedback as possible when the opportunity presented itself. Often, this enthusiasm to get everything out to the student manifested itself in criticisms, which students, obviously, might find demoralizing. The formal embrace of praise became an important guiding principle for marking student work. Every piece of student feedback began with an item of praise for whatever the student had done well. Errors weren’t pointed out line-by-line, item-by-item, but were instead addressed globally. For example, a piece of student feedback might read: “Very strong start! Make sure you use standard punctuation. Also, you didn’t explain why you chose this article.” In essence, the grading became about pulling out and correcting problematic issues, but empowering the student to decide how to go about the correction. Making sure the students received some positive reinforcement seemed to help keep them invested in the class. Instead of feeling like they might not ever get out from under their errors, the idea was to make them feel like they were on the path toward understanding the course materials.

A key part of the WID training was moving students toward a long-form writing project, with the final project carefully scaffolded over the course of the semester. One of the challenges for LRC103 was its one-credit status, meaning it met a third less frequently than most writing-intensive classes. Consequently, not only would students probably be writing more than they expected to over the course of the semester, but they would also be writing in a more compressed manner than they might be used to.

The author chose a research narrative as part of the final project, where students would describe the research they found, how they found it, and why they chose it. To complement that, students would also write an essay synthesizing their research findings. The final project would be an essay on the impact of Google on privacy and would be five to seven pages long. The project (see Appendix) was divided into four stages, plus a peer-review session, and a marked first draft. The following four stages built toward the final project resulting in two essays:

1. Stage one was a search (Google and privacy, the topic of their final projects) across various search products, asking students to identify the citation elements of what they found, as well as the format. The interesting deviation from previous assignments was asking students to write about how they knew the format. In addition to searching and finding, students were also articulating their understanding of format. This step was very helpful in that it gave the instructor insight into the thought processes of students when considering the format of material found online.

2. Stage two was similar to stage one, but also included some low-stakes writing.
3. Stage three built upon stages one and two, but also invited students to identify bias in the articles they found.

4. Stage four served as a trial balloon for the final project. Students selected two sources related to their final project and thoroughly evaluated them, discussing how they found them, where they found them, if there was bias, and other information literacy concepts. This too, was fairly standard.

The interesting part of the project came during the peer-review process where students were paired off to review the work each had submitted for stage four. In other words, instead of only the instructor reviewing their work, students would also be reviewing each other’s work, with the help of a rubric and a check-list of items to consider. This process really seemed to work well for the students. While many seemed to have trouble being critical of something considered formal -- like an article found online or in a subscription database -- they had no trouble applying a critical eye to articles and web pages someone else had found.

Yang and Tsai (2010) articulated the several advantages of online peer-review. Among the advantages they mentioned that seemed to be true for this particular online class was the comfort provided by the semi-anonymous nature of the online realm. Students had a sense of who the other students in the class were, but it was quite possible, if not probable, that they had never met face-to-face. This semi-anonymity gave their peer-reviews a candor that was helpful and not often seen in the instructor’s face-to-face peer-review sessions.

Also helping students was the fact that by the time they were participating in the peer-review process, they had already spent half of the semester writing about evaluating sources, so they were becoming comfortable with the language of evaluation, as well as the ideas. Also, seeing some of their classmates’ missteps might have helped students to correct issues in their own work.

What seemed helpful about this project was that since students were working toward a specific final project, their evaluation of their sources was less hypothetical than it sometimes is in situations where they are gathering sources for a paper they might not actually write for a class, as had been the case in previous LRC103 sections taught by the instructor. The essay synthesizing their findings seemed to force students to choose strong, relevant sources, since they would need to use whatever they found, rather than just describe what they found.

What was very helpful about using the WID process to stage this assignment is that it allowed the instructor to separate the vocabulary of evaluation from the skills of evaluation, allowing students to develop both, but separately. So instead of poorly-written evaluations that were theoretically sound and well-written evaluations that were inaccurately evaluated, more student work was better written yet conceptually sound.

**Discussion**

In general, the application of the WID concepts to the online LRC103 seemed to prove successful, for what appear to be a number of reasons.

The positive grading seemed to keep students engaged in the class, since in any given week, students who had committed satisfactory, or close to satisfactory, work were given positive feedback on what they had submitted, as well as areas where they could improve. But the very act of starting with positive feedback and praising whatever the student had done right really seemed to alter the dynamic of the class for the students, giving them motivation to improve.

In the face-to-face environment, grading is just one of many different types of interactions one has with students. In the online realm, as this class was instructed, grading was one of the main points of student-professor interaction. Consequently, negative feedback might have felt amplified to students. By making students feel like they were successful in at least some aspect of the class, many were encouraged.
to keep participating in the class. Also, hearing what they did well seemed to make students more open to listening to what they could improve.

The writing to learn stages of assignments were also especially helpful, in that they gave students a place to let their writing evolve. The nature of the one-credit class is often that the instructor expects students to get up to speed immediately. Students who cannot keep up with the pace often fall behind. But by building in assignments where students could figure out how to express the vocabulary and ideas of evaluation, in addition to the actual skills, student work seemed to improve over the course of the semester (for some students).

The final projects submitted also seemed to be of higher quality than in previous semesters. One reason is probably the fact that the assignment was so carefully staged, with students working on the project for weeks, and getting feedback from the instructor and from their peers, as the semester progressed.

The final projects were also useful to the instructor in that they contained not only what students found, but what they thought about what they found. The discussions of the sources found and if they were reliable and appropriate were stronger than in previous iterations of the class because the students had so much practice writing about evaluation.

The peer review was also helpful in giving the students some semblance of peer interaction, which has not been a strong area of the instructor’s fully online classes. Students interact with the instructor, but there has not been much peer interaction in previous versions of the class. The peer review assignment presented an opportunity for students to work together and communicate with each other, although it’s hard to gauge just how much interaction took place, other than the peer comments on the work submitted to the instructor and the student.

Another factor in the success of the final project might also be that students were not only conducting research, but using their research to build an essay. Consequently, students really needed to think about what they were using to write their essay, since they not only needed to work with it in one essay, but to justify it in another. This effect is not necessarily WID-specific, but it is interesting to note.

For this particular class, the one WID concept that did not really work was the minimal grading. As a one-credit class, students only submitted work once a week. If some pieces were graded formally and others were graded minimally, students might have become confused. It would have raised the question of why some parts of the week’s worth “counted” and others did not. But unfortunately, not enough work was gathered over the course of the semester to allow the instructor to readily remove formal grades from the grading formula. If even just a few grades were to be removed, the remaining assignments suddenly became high stakes, with students potentially being unfairly punished for what should have been a routine assignment.

The issue of minimal grading is hardly insurmountable, though, and just needs to be re-thought by the instructor. The collection and submission of work in the online class is very much based on the patterns of a face-to-face class and perhaps that pattern needs to be rethought to allow for more minimal grading opportunities.

The instructor has not taught online since implementing WID over two semesters, but is very curious to continue to experiment with the concepts. One area that might be modified is the peer-review assignment which basically took place over two weeks: one week to write a short narrative of research and another for the actual peer-review process. This presented students with a lot of work in a short amount of time, so the instructor might consider expanding the task to three or four weeks, allowing more time for work and for reflection.

Also, while not a WID issue per se, the instructor might re-evaluate the use of blog content in the class and figure out a way to make the blog-driven assignments a bit more in the style of writing to communicate. The instructor also might look at ways to use the blog commenting function as a way for
students to get more experience constructively critiquing and evaluating each other’s work on a more ongoing basis.

**Conclusion**

Assessment is an increasingly important component of academic librarianship. Librarians ask how they can gauge their effectiveness and how they can have students demonstrate information literacy. Unfortunately, WID does not solve this problem for librarians. WID does provide a way for librarians to get a better sense not just of what students found when they searched, but what they thought of what they found when they searched. WID provides a way for student searching behavior to become more transparent and apparent to librarians.

This kind of extensive written communication, while certainly not out of place in a face-to-face classroom, is particularly well suited for the online arena, where for most libraries, virtual oral communication is not an option.

The WID process is also very helpful in that it transitions students into the language of evaluation, giving them a space to become comfortable and ultimately, a space within to evaluate. For students without a strong information evaluation background, this space can help a student learn to demonstrate an understanding of research.

When discussing the issue of online classes, technology is always an important consideration; but pedagogy is equally important, if not more so. WID provides a framework in which students can explicitly demonstrate an understanding of research and sources. It is something every online librarian should consider exploring.

_The author wishes to thank the facilitators and leaders of LaGuardia Community College’s Writing in the Disciplines program for their help in selecting articles about the WID process._
References


Appendix

LRC103 Term Project

Steven Ovadia

Your term project will consist of an essay about the research strategy you used to find and evaluate your resources. The essay will be the story of what you found and how you found it. I will use your essay to find your sources. If I cannot find what you found as you described your research path, your grade will be lowered.

The topic for this essay will be “How is Google impacting our privacy?” We spent the semester exploring various search tools from subscription services like Academic Search Premier, to freely available services like Google Scholar. While many of Google’s services are both helpful and convenient, there is a price to be paid in terms of what Google learns about us from our searching. Your essay will detail how private information becomes public as a result of various Google services.

Your essay must use four online sources. At least two of these sources must be from a subscription database (found on the Find articles & books online (subscription databases) section of the Library Website). The others may be found from any resource of your choosing.

You must actually see and read every item used in your essay. You may use two of the sources you discovered for the various homework assignments over the course of the semester.

Part I should be 3-4 pages. Part II should be 2-3 pages.

Your essay will be comprised of two parts:

I. Your essay must address the following for each of the four sources you find. This part is designed to help me find what you found so be as detailed as possible. If I can’t find what you found, your instructions were not detailed enough.

- Where did I search (Google? LexisNexis? Academic Search Premier)? Why did I choose to use that search tool? Did my search lead me to another database?
- Here is where I will describe what I found. What is the format of what I found? What did it say? How was this useful to me?
- What keywords did I use? Why did I use those keywords?
- Who created the information? Who published it?
- Is this information trying to convince me of something? What is its point-of-view? Does the publisher have a bias I’m aware of?
- When was the information created? Is it too old to use?

II. Your essay should end with a discussion of the various ways Google has impacted our privacy. This part of the essay will be a reflection on what you learned from all four sources, so please quote or paraphrase each of your sources.

What are the ways Google is impacting our privacy? Is Google giving its users more privacy or less privacy? Are these concerns limited to just Google or do they apply to other companies? Is the information Google collects important to you? Is it important to other people? What are the dangers of the loss of privacy? What are the benefits?
When Off-Campus Means Virtual Campus: The Academic Library in Second Life

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Abstract
This paper will discuss how a library’s consistent policy of accessibility and foresight positioned itself to serve its students, faculty and staff in the virtual world of Second Life. Always ahead of the technological curve, this library has been the front runner in providing services to distance learners via text messaging, "chat," email, and telephone services and via its laptop librarian project across the campus. It now is poised and ready to provide service in Second Life. Collaboration between the library and teaching faculty culminated in the creation, development and furnishing of a library in Second Life, an environment which gives new meaning to "off-campus" learning. Without marketing, but a visible presence, the Second Life library was able to attract both off-campus guests and affiliated students and faculty and even participated in campus-wide projects. This experiment has enjoyed the support of both the university and the library administration.

Introduction
Throughout the years, libraries and librarians have spearheaded collaborative activities and stayed abreast of current and emerging trends. Indeed, libraries have implemented creative solutions that foster the development of collaborative relationships (Buck, Islam, & Syrkin, 2006). As trendsetters, librarians are able to identify critical early opportunities for libraries driven by social and technological change (Bell & Trueman, 2008). This paper will discuss how the librarians at Sims Memorial Library (Sims) at Southeastern Louisiana University (Southeastern) through their own initiation and nurturing of campus-wide relationships found themselves pivoted to the forefront of Second Life (SL), and how this activity ultimately enhanced distance-learning initiatives by serving off-campus students.

Background of Sims Library
Sims Library is a medium-sized academic library located approximately 50 miles north of New Orleans. Southeastern is largely a commuter campus serving approximately 15,000 students and is considered the second largest provider of distance education in Louisiana. This library employs best practices and has consistently remained on the cutting edge of technology. Sims began chat reference in the fall semester of 2002. In the spring of 2005, Sims was the first library in the country to initiate a “Text A Librarian” service that allows its students, faculty, and staff to utilize their cell phones and send reference questions to and receive answers from their librarians. To reach out to the students who do not come into the library, the reference librarians have taken their laptops and “roamed” the campus, sitting at the student union and other high-trafficked areas. Recently, the library joined Facebook and Twitter and invited students, faculty, and staff to communicate their needs to the library. SL then is yet another face of Sims Library and an opportunity to provide additional service to the distance learners. Sims librarians believe that SL offers a built-in redundancy for distance learners.

What is Second Life?
SL is an Internet-based open source three dimensional virtual world platform developed by Linden Research Inc., and launched on June 23, 2003. It is a Multi user Virtual Environment (MUVE) accessed by many users simultaneously and facilitating the interaction between people. "Second Life is probably the best-known example of a virtual world that can be used for a wide variety of purposes" (Kelly, 2008, p. 423).
From the time it was launched in 2003, over 15 million accounts have been registered in SL. The Gartner Research Group opined, “By 2011 about 80% of regular Internet users will have a 3-D Web presence.”

On the surface, SL looks like a video game because it uses an interface similar to PC gaming. However, there are no rules, objectives, points, or levels to attain. The environment is totally designed, built, and scripted by the residents who retain intellectual property rights of their creations. These intellectual property rights owners often sell their creations, usually in unmanned kiosks or stores. The SL currency is the Linden Dollar. At the time of writing, one US Dollar is valued at L$260 (Second Life, 2009). Linden Dollars are required for buying and renting property in SL. Some clothing can be obtained free of charge, while other clothing could be purchased using Linden Dollars. The users of SL are called residents. These residents create a customizable three dimensional cartoon representations of themselves called avatars. Parker (2008) observed that approximately 50,000 avatars are present in SL at any given time.

The basic avatar can be animal or human in appearance. It may also be of either gender, can have a wide range of physical attributes, and can interact with the game environment and other avatars. Interactions occur by typing in a chat box, instant messaging (IM), or via voice with the use of a microphone. Thus "SL gives the opportunity for avatars to have a real-life kind of exchange and get the feeling of personal contact that is not present in email or IM" (Godwin, 2008, p. 171). Libraries were drawn to the new paradigm almost immediately. As Kitty Pope, Executive Director of the Alliance Library System (ALS) said, "Second Life has malls, residential neighborhoods, online communities -- why not a library?" (Hawkins, 2006). SL has definite advantages for librarians and more specifically for librarians interested in providing a presence in the virtual world.

Southeastern Louisiana University and Sims Library in Second Life

Library faculty at Southeastern began dabbling in SL in 2004 and envisioned using it as a means to enhance educational content and delivery. In 2005, while interacting informally with a staff member for the university’s Center for Faculty Excellence (CFE), a library faculty member broached the subject of SL as a potential for interactive learning. At that point, SL was still very new, and the CFE staff member had not yet entered SL. Several months later this same person enthusiastically reported an opportunity to collaborate with other Louisiana institutions in developing a virtual campus in SL.

Dr. Merrill Johnson, Associate Dean of the College of Liberal Arts at the University of New Orleans (UNO), and Dr. Richard Speaker, also of UNO, applied for and obtained a Louisiana Board of Regents Support Electronic Learning and Essential Campus Transitions (SELECT) grant to establish SL islands. The grant allowed creation of a series of virtual campuses in SL by UNO, Southeastern, Southern University of New Orleans, and Tulane University. Each university was to investigate the pedagogical implications of three-dimensional Web instruction. Gayle Campbell, Technology Coordinator and Blackboard Administrator at Southeastern's CFE, became the lead person for Southeastern's SL initiative. Recalling the interest previously voiced by the library faculty, Campbell contacted the library and invited the library's participation early in the process. Thus, Dr. Lynette Ralph, Assistant Director of Sims Library, became one of a very select group of Southeastern faculty who comprised an interest group designated to develop activities to promote SL on the campus, and in their specific areas of discipline. The University administration supported this project.

Development of the Sims Library in SL

Using the library's Emerging Technology Committee (ETC) as its development team, Sims embarked on an adventure to both investigate the usefulness of SL for library reference and instruction and to identify new and creative activities for libraries in SL. There were nine members of this committee, including eight librarians and one classified staff member. As the project unfolded, other librarians were invited to participate. The library administration supported the project by providing the resources and allowing each person the time required to play in SL. Members could use their office computers, and headphones were provided to facilitate discussions in SL. A brief orientation was provided, and then
volunteers were required to download SL, create an avatar, and start the orientation process. It was a very collaborative learning process. Those who understood the system provided guidance on how to create an avatar, how to get off the Orientation Island, and how to interact in SL. When needed, librarians were provided with individual assistance on how to customize their avatar, how to select clothing, movements, and gestures.

Preparation and training began in August 2008. It was necessary to "build" a library before the opening ceremony in September 2008. The library representative participated in discussions and negotiations for building the virtual campus which included classrooms, meeting areas, and recognizable campus landmarks. It was agreed that the library would share facilities with the CFE. The library occupied the ground floor while the CFE occupied the top floor. The library's representative met with members of the ETC and brainstormed about the décor and furnishing needs of the library. She then met with John Valentino, a faculty member in the Visual Arts Department who was very skilled in developing within the SL world. At first, the library consisted of only a desk, chairs, and a rug. Dark brick walls, hardwood floors, large airy windows and dark wood furnishings were used to provide an open yet traditional ambiance. Library resources were added which would allow visitors to open Web resources in a separate browser window. Each object carried a floating label identifying the resource and simple directions such as "click here." Examples of resources made accessible in this manner were the library's homepage, databases page, the online catalog, and the "Ask a Librarian" reference services page. The library also added a SL classroom which included several seats, a podium and a screen for streaming videos. Eventually, another podium and retrievable note cards were added to the main reference area of the Sims SL library. On September 26, 2008, the consortium of four Louisiana universities held a ribbon cutting ceremony to launch the virtual campus in SL and the Sims avatars actively participated in the celebration.

![Ribbon-cutting ceremony in Second Life.](image)

*Figure 1. Ribbon-cutting ceremony in Second Life.*
Activities of Sims Library in SL

The first official activity in SL was the multi-university grand opening ceremony. Avatars met on the grounds for the opening remarks, and then joined the walking (or flying) tour.

![Figure 2. Walking (Flying) tour at opening ceremony.](image)

As the participants arrived at a building, the representative for that building welcomed everyone and indicated how they envisioned using the building. The library tour followed the same method. Librarian-avatars welcomed the guests, introduced the library faculty and outlined the vision of providing reference services, bibliographic instruction, and orientation sessions. Visitors were encouraged to browse and freely use the resources.
Although not actively marketed, there was continuing activity at this SL library. First, there was an email from a University of West Georgia professor who wanted permission to use the library in SL. Next, an email from a Southeastern Nursing instructor who explained that she and her students were planning a Health Information Fair in SL. The undergraduate students in NURS 488 (Promoting a Healthy Community) designed and implemented the Fair, targeted at 17-24 year old students who were residents of Southeastern’s virtual SL campus. Nursing students selected eight health topics, ranging from smoking to diabetes, and erected displays in the courtyard of the virtual campus. While in SL, the instructor had encountered the library, and sought library participation in the Health Fair. This became a new project for the ETC, which enthusiastically embraced the idea.

The Co-ordinator for User Education prepared the instruction activities, the Assistant Access Services Librarian assisted others with their avatars and helped brainstorm for the Fair, and other interested librarians were invited to participate. Lynette Ralph served as the liaison between John Valentino and the ETC. A large banner highlighting “Health Fair Resources” was created and a desk with three computers was added below the banner. Each computer station provided links to one of the following electronic resources: Nursing and Allied Health Subject Guides, prepared by the Health Sciences Librarian; Medicine/Consumer Health Subject Guides, prepared by the Health Sciences Librarian; and the Medical Library Association’s “Top Ten” Most Useful Websites for Health Consumers. These resources complemented the displays created by the Nursing students at their nearby Fair.

During the Health Fair, the library was manned from 11:00 a.m. to 2:00 p.m. by eight different librarian-avatars. Without a counter there is no way of providing accurate statistics of the use of the library during this time, but anecdotally, several visitors came to the library. Some browsed, some asked questions, some were even librarians from other libraries considering the development of their own SL library. For example, there was an avatar from an Australian library asking very detailed questions about plans for use and the level of support for the project from library administration. All the visitors were impressed with the...
library and praised its resources and surroundings. Everyone thought the library was very inviting and welcoming.

Figure 4. Library Health Fair resources with student displays in courtyard.

**Bibliographic Instruction for SL Classes**

The Health Fair served as an important first professional presence in SL for Sims librarians. With time and increased staffing, Sims librarians could have further developed the SL library, including additional instruction sessions. Grassian (2007) suggested that SL librarians can use SL as a way to incorporate information literacy into "curricula, research, and course assignments as they are designed" (p. 86). Several Southeastern faculty members embraced the idea of teaching in SL. In the fall of 2009, two Southeastern classes were at least partially taught in SL: ENGL 315 (Performing Virtual Identities) and ENGL 651 (History of the Book). A third class is planned for the spring semester of 2010 in an undergraduate educational technology course, as well as a BI class for doctoral students in the Educational Leadership program. The professor for the ENGL 315 class requested a bibliographic instruction session through the Coordinator of User Education. The challenge was how to deliver virtual bibliographic instruction. Since it is not always reasonable to expect virtual students to "meet" at a particular time, the librarian decided to create web casts for the class. The web casts were posted to the podium in the SL library so students could attend at their discretion.

**Reference Service in SL**

Opportunities for librarian interaction in SL can take many different forms. If the goal were to create an academic library presence in SL that mirrors services and resources in the real academic library, the SL library would include reference services, electronic book, and database access. Few libraries have "extra" personnel resources to devote to providing a continuing reference presence in SL. While many academic libraries might be able to "build a library" in SL or undertake a pilot or experiment with library
instruction in SL as described above, staffing regular reference service hours in SL requires a more serious level of commitment. An acceptable compromise might be to staff the virtual library when faculty know students will need access to librarian assistance. Ancelet, Fisher, and Spies (2009) described a pilot reference desk at Texas State University-San Marcos, which began in 2007 and continues as of this writing. Sustained, regular service requires true dedication of personnel and considerable marketing in order to reach the student population. Although Sims flirted with the idea of a scheduled reference service in SL, staffing levels prevented this from happening. Instead, Sims depended on its patrons' ability to access library reference assistance through the link to the suite of Ask A Librarian services: telephone, email, "chat," SMS text-messaging, and appointment-based reference.

While Sims was never able to staff a reference service in SL, other libraries have been very successful. Their experience shows that the quality of reference service in SL can be equivalent to or even exceed the real life reference environment. Luo (2008) presented a study of reference in SL at the Alliance Library System (ALS) SL project virtual reference desk. She concluded that "SL reference is no different than other types of reference services....What's new about SL reference transactions is the staffing model, the reference environment and the user community" (p. 297). Tang (2009), a volunteer reference librarian for the ALS project, introduced readers to her experience and provided a realistic portrait of the efficacy of using SL for reference services. She provided examples of value-added features like cross-language reference transactions, access to library specialists, and easy collaboration across time periods and distance. Finally, Buckland and Godfrey (2008) described both the advantages and challenges of delivering academic library reference services in SL based on a pilot at McMaster University Library's Steel City Island.

Why Should Librarians be in Second Life

Some traditional librarians may wonder why already busy librarians would seek yet another venue and another service point. This paper discusses three main advantages for librarians in SL: networking, best practices, and collaboration.

Networking

At last count, there are over 260 libraries in Second Life (Greenhill, 2008). SL offers the opportunity to network and develop professional relationships with other librarians from around the country and around the world. For librarians who are geographically isolated or in a one-person library, SL can help reduce isolation. In SL they can meet other professionals on a regular basis. Descriptions of the collaborations between the librarians coming together in SL are filled with examples of cooperation, sharing and networking.

The largest and most successful collaboration in SL was born when the ALS and Online Programming for All Libraries (OPAL) joined together in 2006 to create the Second Life Library 2.0 (Hedreen, et al., 2008). The undertaking sought to explore current and future library services in a virtual world and has expanded to include many partners, now known as the Info Archipelago (IA). This IA with its multiple islands of libraries forms an alliance known as the Alliance Virtual Library (AVL) and offers not only reference service, but also instruction, specialized collections, and events. Thus the AVL has become the heart of the IA, a thriving community of librarians, library staff, library students, educators, and other professionals who share a common vision of service, education, and creativity often transcending national, cultural, and language boundaries. The AVL has more than a thousand self-identified librarians in SL. These librarians network monthly and share experiences, offer suggestions, problem solve or just interact. SL has indeed put new meaning into the phrase, "library as place." The SL environment then, allows these professionals to meet and work together, and has therefore provided the opportunity for relationships that library associations and conferences have sought, but without the expense and time needed for travel.
**Best Practices**

The exposure to SL allows librarians to become cognizant of best practices. They observe first-hand how other libraries are using the three dimensional virtual worlds to improve services and reach out to new users. SL offers the opportunity to promote the real library and online library services to people who might not otherwise use the library - that section of the community that spends a significant amount of time online. Examples of creative services include book discussions, genre interest groups, training sessions, and other programs to current virtual residents. One unique service offered by the SL Branch of the Nebraska Library Commission is a card in the lobby titled "What to do in Second Life" which features staff picks about places to go and things to do in the virtual environment. This provides an interesting mixture of education and entertainment.

Luo (2008) conducted a two-stage study to determine the value of SL in delivering Library and Information Science education. It was found that SL was a rich platform for distance learning and most educators utilized SL to create an environment for constructive, experimental, and distance education. A follow-up study showed interest in using SL to teach classes in areas such as reference. In the virtual environment, the sky is the limit, as there are few restrictions on what programs can be developed in the SL library.

**Collaboration and Sharing**

Participating in SL allows librarians to grow professionally then collaborate and share information and become part of a collaborative learning community. For example, librarians who serve as volunteers at the main ALS library on Info Archipelago have a variety of job duties. Some volunteers staff the main desk for one or two hours a week, greet visitors, provide mini tours and answer questions. Others post blogs and participate in projects such as the Genealogy Library and the Medical Library. These projects involved many librarians working across countries and time zones. Some of the questions come from curious librarians, educators, and students, but other questions come from the residents doing just what they might do in the real world when they have a question: go to the library! Tang (2009) shared her experience as a volunteer and observed that the AVL has characteristics similar to those of libraries in real life, and pointed out her ability to attend lectures and book talks without the cost of travel. Greenhill (2008) shared her experience of being able to discuss podcasting, single person libraries, and library instruction with experts in these fields. Librarians who volunteer or utilize SL not only have the opportunity to collaborate on a global level, but can also attend local, regional, or national conferences and share information acquired through their experiences.

**Issues, Challenges, and Concerns Influencing Use of Second Life**

**Hardware**

Appropriate hardware and software are required to run SL successfully. Minimum recommended requirements include an Internet connection using Cable or DSL. (SL is not compatible with dial-up Internet; satellite Internet, and some wireless Internet services.) The Operating System must be Windows XP (Service Pack 2) or Windows 2000 (Service Pack 4). The computer processor must be 2 GHz or better. The computer memory must be 1 gig or larger and the computer must have a graphics card. Mac users need the OS X 10.3.8 or later operating system, the 1 GHz G4 or better computer processor, and 512MB or greater computer memory. Systems that do not meet these requirements may not be able to participate in SL. Failure to have the adequate hardware and software can result in embarrassing experiences. For example, an avatar may appear naked in a room full of people as it awaits the downloading of its clothing (Parker, 2008).

**Learning Curve**

The learning curve to function effectively in SL is quite steep. Basic activities such as walking around without falling or bumping into things and simple gestures such as waving, sitting, or laughing are
all very challenging initially. It can become a real challenge to stop an avatar from dancing or to make it turn around instead of flying upwards.

Sims librarians who participated in the Health Fair described above noted an interesting phenomenon. When librarian-avatars first entered the SL library for a shift at the Fair, they were hesitant and reserved. While all the librarians knew each other very well, their avatars were not familiar to one another. During the shift, the avatars slowly became more comfortable with each other, began interacting and exploring the library. As avatars of Nursing students and visitors approached, librarian-avatars slowly became more relaxed. One librarian was surprised to find a former student in the Nursing class. When the avatars recognized each other's real world identities, they conversed with each other with ease. The learning curve, therefore, concerns not only the technical aspects of movement, but also the sense of SL persona security that comes with time and practice.

Development

Because there are no templates in SL, all building and scripting activities are restricted to experienced SL residents. From personal experience, building the library required having the assistance of someone else and collaborating at his convenience. Development of an SL library requires a combination of creativity, technical expertise, imagination, and teamwork.

The Future

The future of Sims Library and Southeastern in SL is uncertain as Louisiana Board of Regents funding is required for continuation of the project. However, whether or not this particular experiment continues there is a general understanding that environments like SL will have a role in pedagogy and libraries of the future. Lori Bell who led the ALS project in SL "believes that virtual worlds are going to be the new learning management systems...researchers are combining the asynchronous interaction of an LMS with the synchronous and unique interaction you can get in the virtual world as an avatar" (An island…, 2008, p. 8).

The use of SL as a method to deliver library instruction is new; it was not available for consideration in the 2005 ACRL SPEC Kit on Collaboration for Distance Learning Information Literacy Instruction (Association of College and Research Libraries, 2005) or the 2006 article that examined whether the current trends reflect best practices (Buck, Islam, and Syrkin, 2006). Yet academic libraries are already being asked to deliver library instruction in "other worlds." SL may be one of the "unique environments" for educational opportunities mentioned in the ACRL Guidelines for Distance Learning Library Services (Association of College and Research Libraries, 2008). Sims librarian avatars have had only brief encounters with their students in SL, but can already understand the potential impact of these worlds.

Livingstone and Kemp (2008) undertook a project to integrate the MUVE of SL with the Moodle learning management system and named their open source product SLOODLE (Simulation Linked Object Oriented Dynamic Learning Environment) (SLOODLE, 2009). Distance learning librarians may soon find that they are asked to serve as embedded librarians in SLOODLE classes, in the same way that they have been involved in Blackboard or WebCT courses. Jeremy Kemp is an instructional designer, and lectures in the School of Library and Information Science at San Jose State University. His work with SLOODLE portends an ongoing library connection to the MUVE-virtual learning environment hybrid.

Conclusion

Academic libraries are primarily service organizations. In order to provide cutting-edge service, librarians must stay alert, initiate the discussions, and ask the vital questions about all new technologies as they appear on the horizon. This vision and communication with other stakeholders continue to propel academic libraries to be leaders on their campuses. Academic librarians who look ahead and take risks are remembered and are seen as people "in the know." While this foray into SL may not ultimately be enduring, this project was exciting, fun, and instructive for the librarians who participated, and it reaped
benefits for the library within the institution. Should prognosticators be correct, and SL becomes the new course management environment, the team will be well poised for distance learning library services in SL.
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Mediating at the Student/Wikipedia Intersection

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Abstract

Wikipedia is a free online encyclopedia. The encyclopedia is openly edited by registered users. Wikipedia editors can edit their own and others entries and some abuse of this editorial power has been unveiled. Content authors have also been criticized for publishing less than accurate content. Educators and students acknowledge casual use of Wikipedia in spite of its perceived inaccuracies. Use of the online encyclopedia as a reference resource in scholarly papers is still debated. Increasing popularity of Wikipedia has led to an influx of research articles analyzing the validity and content of the encyclopedia. This study provides an analysis of relevant articles on academic use of Wikipedia. This analysis attempts to summarize the status of Wikipedia in relation to the scope (breadth) and depth of its contents and looks at content validity issues that are of concern to higher education use of Wikipedia. The study seeks to establish a reference point from which educators can make informed decisions about scholarly use of Wikipedia as a reference resource.

Introduction

Wikipedia is a popular online encyclopedia that receives 8,291,487 views per hour to the English edition, making it one of the top ten popular web sites. Wikipedia has received some criticism because of its open editing policies that allow anyone to compose and edit entries. Current studies reveal a dearth of content breadth and scope in some subject areas and satisfactory content quality in other subject areas. A report in Nature (Giles, 2005) reveals some surprising findings of a comparison study of Wikipedia to the print edition of Encyclopedia Britannica. Wikipedia was found to have about three errors in a science entry compared to four in a Britannica entry. Wikipedia contributors can edit their own and other contributor’s entries and abuse of this editorial power is sometimes malicious and sometimes just lacking in exactitude (Royal and Kapila, 2009). Wikipedia culture supports the idea that errors in entries will be corrected eventually by one of the 75,000 active contributors.

Wikipedia can clearly be used to teach digital literacy skills and its role as a collaborative laboratory for exploring the development of information quality is an epistemological asset (Fallis, 2008). Wikipedia’s rich resource of outbound links, its ease of use and its pricing, free, contribute to its popularity with students (Rainie & Tancer, 2009). These combined factors are propelling increased use of Wikipedia citations in student publications (Tomaiuolo, 2009).

The History and Development of Wikipedia

Today’s read/write web encourages synchronous communication and information sharing (Shuman, 2001). Falk (1998) characterizes the web as both a predictor and an expression of change that is influencing our culture and the way that we communicate. The development of open source software, such as wikis, contributes to the information sharing characteristic of the current internet, often referred to as Web 2.0 (Social Networking Services, 2007). Wikipedia.org, with 684 million visitors in 2008, is one of the most popular web sites out of the billions of web sites found online. As of April 1, 2009, Wikipedia contains more than 2,820,744 articles and has 75,000 active contributors. Wikipedia’s growth potential appears to be infinite.

Spoerri’s (2007) study reveals that search behavior and search engine ranking drives the appearance of Wikipedia results in the top returned hits of a search on many subjects. Students using
Google to search for articles will likely be presented with a Wikipedia reference in the top ten lists of results. As increasing numbers of technically savvy internet citizens contribute to the body of content that is Wikipedia an exponential growth of the encyclopedia can be expected. The birth of a single article spawns the birth of another article or stub (a stub is an item with only a few phrases in it) and when that stub is fleshed out to become an article, more related articles and stubs are created (Spinellis and Louridas, 2008). Wikipedia’s content and popularity are expanding concentrically around its social networking base and interest doesn’t seem to be fading. The drive to make contributions to Wikipedia coupled with increased exposure through search engines results is having an impact on the growth of this online encyclopedia. There is a self perpetuating force behind Wikipedia that is characteristic of online social media (Shuman, 2001). Wikipedia is popular but at the same time it is being criticized for its subpar contents and vulnerability to malicious edits (Chesney, 2006). Information specialists and educators are concerned with the quality of information being authored and viewed.

An Overview of the Quality of Wikipedia Contents

Wikipedia contributors should strive toward writing objective, factual articles on topics of interest to the author and in which they have some degree of expertise or sound knowledge. However, articles appearing in Wikipedia vary in both content quality and in writing style. The editors of Reference & User Services Quarterly engaged the use of a quality matrix normally used to gauge print reference titles to conduct a brief critique of Wikipedia (Wallace & Fleet, 2005). The critique reveals some shortcomings of Wikipedia in relation to print reference resources. Those shortcomings include a lack of objectivity and authority, two characteristics that Wikipedia contributors are mandated to strive for in writing articles. The authors note that while Wikipedia espouses its content authors to adopt a neutral tone, this precept is, on the whole, countermanded by its principle of giving weight to the majority definition when disputes occur. When a dispute occurs about the validity of an article, the article is discussed in a talk forum that becomes a permanent part of the encyclopedia entry, when a consensus is arrived at and the article is considered to be finished or stable. The consensus is driven by a majority vote of editors who agree on what makes the article valid, which consensus may or may not be neutral. However, the democratic nature of the editing process is valuable to its contributors. That is, it upholds and supports the idea of a democratic relationship with information. Like public libraries, Wikipedia reflects access to a body of knowledge that is deemed important to those who support it. But, unlike public libraries Wikipedia relies on donors for funding and this may have an impact on its future. A commercial enterprise would certainly change the democratic ideology of Wikipedia. The quality matrix used in the Wallace and Fleet critique is mapped for assessing attributes of print resources. The lack of an index is noted, a criticism that better points out the difference between print and electronic resources than offering a valid evaluation point of Wikipedia contents. After all, part of what makes Wikipedia so successful is its online searchable format. No index is required.

Nature, the science magazine that publishes peer reviewed articles on a variety of scientific topics, performed a comparison of Wikipedia to Encyclopedia Britannica and found them to be comparable in accuracy of articles (Giles, 2005). A random selection of articles was chosen from both encyclopedias to be evaluated by academic experts in their respective fields. The experts were not told whether the article they were reviewing came from Wikipedia or from Encyclopedia Britannica. Their findings show that only eight serious errors were found, four from each encyclopedia. Nature found that the readability of Encyclopedia Britannica articles is greater than Wikipedia articles which are often written in a less scholarly tone. This is a criticism directed at the body of contributors to Wikipedia who are mostly not scholars, but rather enthusiasts of the topics they write.

A bias toward recent and popular items has been noted in some examinations of Wikipedia contents. Royal and Kapila (2009) used a systematic method of analyzing Wikipedia for completeness of information using the following predictors: recency, importance, country population, and economic power. They found that definite biases occur with recency driving content coverage. It was found that the latest popular culture topics like musical artists and Academy Award winning films were more thoroughly covered, the more recent the year of occurrence. Older films and musical artists received fewer words in the Wikipedia article than more current artists and award winning films. They report that popular culture terms also received increased topical coverage. In measuring comprehensiveness of information across dimensions other than recency, such as country population, it was discovered that larger countries and those
with higher economic power received more coverage on Wikipedia than smaller, less economically powerful countries. The authors conclude that Wikipedia is evidently a product that reflects the social profile of its online users and does not present an unbiased point of view when considering total topical coverage of country population and economic power.

Halavais and Lackaff (2008) measured a characteristic of Wikipedia’s content not related to accuracy and validity, that of breadth of content coverage. They compared topical coverage in Wikipedia with topical coverage found in book topics listed in Bowker Books in Print. This is not an exact comparison due to the different nature of the mediums. Wikipedia routinely reflects the interests of its contributors and not necessarily that of the general audience of English speaking readers. Naval sciences, the sciences and music are all topics well covered in Wikipedia, but the music coverage includes articles written by fans on music groups. Likewise there is dense coverage of literature topics but this is artificially emphasized by the presence of long articles on the Harry Potter series. A second part of this examination compared Wikipedia topical coverage to several printed scholarly encyclopedias covering linguistics, poetry and physics. Not surprisingly it was found that, overall Wikipedia’s coverage of topics is greater than the print editions of encyclopedias. Print editions are limited by type and paper, while Wikipedia knows no such limits. A noted gap in Wikipedia over print articles is in the fields of law and medicine, probably because these are fields dominated by licensed experts who may only currently be contributing to professional print mediums. So far it can be seen that topical coverage in Wikipedia is somewhat sporadic and is reflective of its pedestrian contributors.

Articles in Wikipedia can rise to a more professional consistency with the use of some tools provided by Wikipedia. Wikipedia’s value may be increased through the use of the cite journal (Wikipedia, 2009) template to note outbound links to verified resources. The cite journal template improves metadata standards of entries and makes it easier to assess validity. Nielsen (2007) analyzed outbound citations from Wikipedia and weighed them against Journal Citation Reports. The results showed Nature, Science and New England Journal of Medicine to be widely cited, however impact factors are marginalized when taking into consideration whether or not a cited journal is freely accessible. Here again using a matrix designed for traditional print resources does not map exactly with measuring an online encyclopedia. Articles that are freely accessible are available online and are therefore more frequently cited in Wikipedia because they can be easily referenced with hyperlinks in wiki software. The cite journal template could have an impact on outbound citations because it simplifies and standardizes the citation and linking process for referenced articles in subscription databases. The study suggests that increased use of structured scientific citations by Wikipedia’s contributors increases the value of the online encyclopedia. More outbound links to scientific journals increases the article’s value as background reading for scientific subjects. The cite journal template is not the only method of validity for Wikipedia being explored by scholars.

Analyzing the age of edits to articles in Wikipedia (Luyt, Aaron, Thian and Hong, 2008) has been suggested as a way of charting article validity with the idea that older articles have been reviewed and edited more often and therefore should represent solidly validated content. The authors studied the survival time of error edits to determine if the age of content in Wikipedia was an indicator of reliability. This study analyzed the number of errors and edits spanning the lifetime of an article in Wikipedia to determine if edit age would be a feasible solution for guiding users with respect to accuracy of information. An in depth analysis revealed that editing of articles occurs at different times in the life cycle of an article and that 20% of edit errors occur early in the creation of the article. Additionally as the popularity of Wikipedia increases so too does the number of editors of an article which leads to increases in error edits. The study suggests that the survival time of an article in Wikipedia does not indicate that it contains fewer errors than more recently added articles. This study found that Wikipedia is quick to respond to vandalism and the life time of vandalized articles is measured in minutes. This study recommends that editors and contributors need to become better error editors throughout the life of an article. Cross (2006) has even suggested the color coding of edits, based on age and number of edits, so that at a glance sections of an article can be determined to be in stasis (accurate) or in flux (in need of validation). A major problem with coding Wikipedia contents this way is that new edits often introduce new errors into the article being edited. While one edit may contribute to the verification of the article, collateral damage is done by the inadvertent introduction of new errors.
When comparing Wikipedia to other online and print encyclopedias all of them are found to contain errors. Rector (2008) conducted a content analysis of purposely selected articles comparing Wikipedia, Encyclopedia Britannica, American National Biography Online and the Dictionary of American History. It was discovered that in a comparison of nine random entries Wikipedia is less verifiable (80.7%) than the other three encyclopedias. The study notes that the writing style of Wikipedia entries was found to lack good chronological flow in history items and lacked a cohesive voice, probably due to multiple contributors to entries. This study concludes that academic use of Wikipedia should be limited until further investigation of its contributors and their credentials is assessed. However, the scrutiny of Wikipedia’s contributors by a scholarly governing body is contrary to the nature of Wikipedia which is popular and viral. The number of contributors to the encyclopedia grows daily suggesting that a backlog of author credentials assessment would materialize immediately upon implementing such a program.

Wikipedia courts verifiability, not truth. Reliable sources, history of copyright and the history edit tab are the gatekeepers to Wikipedia’s philosophy of content reliability. In a hands-on approach to exploring Wikipedia, Willinksy actually edited the sample entries used in this report and declares that this is an example of how research informs the object of study (2007). The author suggests that Wikipedia can gain credibility by getting support from the academic community to allow open access citation to scholarly sources. Then Wikipedia could place more stringent requirements on contributors and editors to cite open access research when adding content. As noted earlier, this seems to be contrary to the viral, populist grain of Wikipedia’s current ideology.

Wikipedia is insinuating itself into classrooms when students cite contents found in the online encyclopedia. The question of how authoritative is Wikipedia remains a valid one and many of the studies in this proposal suggest ways in which Wikipedia’s validity and usefulness in academics can be assessed and improved. Nielsen (2007) examined the number of Wikipedia outbound links found to scientific journals and to non-scientific magazines. A preponderance of citations to Nature, Science, and New England Journal of Medicine and some astronomy journals were found and the most linked to non-scientific resource was The New York Times.

Korfiatis, Poulos and Bokos (2006) proposed to measure author credibility by measuring the number of inputs by one author to an article as a sign of content authority. The more articles in a domain one contributes to the more vested they are in that domain. The researchers suggest that voluminous content contributions equal greater authorial credibility. In a social network like Wikipedia contributors will stake out a domain in which they possess expertise and defend it from reversions, through to a relatively stable edited version. Basing their study on a complex sociometric theory the authors suggest that when an article has a wide spread of various no one of them holds more authority over the other contributors of that article. That is, no one contributor has greater knowledge of the subject than any of the others. Contributors who consistently contribute to a specific domain acquire authorial credibility. Mapping author contributes in domains and within categories could be a measure of content validity in that domain. The interesting idea here is that the social construct is being examined for its contribution to the knowledge system Wikipedia.

**Pedagogy and Digital Literacy**

Stvilia, Twidale, Smith and Gasser (2008) conducted an empirical case study of information quality (IQ) processes of Wikipedia. They specifically looked at how contributors establish IQ of articles in a collaborative online environment such as Wikipedia. The authors note the evolving IQ process and the willingness and determination to discuss validity and edit errors in articles through use of the discussion tab available in each article’s content area. These open IQ discussions are available to editors, authors and Wikipedia users, who may also join in the discussion of IQ if they so desire. The authors of the study conclude that this new system of IQ discussion is a positive element of Wikipedia that promotes reliability of the encyclopedia and contributes to scholarly conversation.

The epistemic value of Wikipedia is high. Interaction with online social media such as Wikipedia promotes digital literacy and can set the stage for learning. Fallis (2008) explored the epistemological value of Wikipedia and found that the collaborative, online nature of the encyclopedia is an important part of its value as a knowledge tool. A characteristic that contributes to this idea is the open discussion forum. This mass collaboration is an important component of Wikipedia’s potential for reliability. The editing field is
open to subject experts, enthusiasts and hobbyists alike who must come to an agreement on facts and meanings. The talk page of an entry becomes a concentrated conversation about disputed facts and meanings. Wikipedia is not a perfect product but the authors of this study see its speed, open-source power and fecundity as major assets that contribute to its value. Certainly a dimension of Wikipedia is difficulty in verifiability of content but the adjacent dimension of collaboration, discussion and fluidity creates a dynamic that supports the growth of knowledge through discussion in an open forum that anyone can join.

A number of studies document use of Wikipedia in higher education learning environments such as classrooms and libraries, both to encourage participation in contributing and to increase outbound links availability to authoritative resources. Grey literature is literature published on the web that cannot easily be found through normal searches. Librarians at the University of North Texas (Belden, 2008) in an organized tactic edited over 700 Wikipedia articles on Texas history. They mainly added links to digitized resources housed at the university in its digital archives collection. Traffic to the University’s digital archives increased dramatically as a result. The University of North Texas library is essentially using Wikipedia as a powerful online indexing source for otherwise obscurely published historical documents. The dissemination of information through outbound links is something that Wikipedia excels at, with help from a well constructed editing plan. Two important concepts were addressed: widespread dissemination of grey literature through Wikipedia outbound links, and a huge scholarly contribution to the body of knowledge that makes up Texas history on Wikipedia.

Pollard (2008) used Wikipedia to introduce History 400 students to a real world experience as historians. Students were directed to contribute scholarly articles to Wikipedia. The author reports that the experiment was valuable to students who learned not only the rigors of insuring content validity but also how to collaborate with others in their field of study. Students gained digital literacy skills and acknowledge the importance of checking resources. Pollard reports that making the students contribute to an online social forum where they might be called upon to defend their articles gave the students a sense of what it is like to work as an historian with others who may or may not agree with the facts they are presenting.

Conclusion

This article shows a number of ways that Wikipedia can be used in the academic setting to teach students critical thinking skills that should be used in any information quest. Students can experience the intensely competitive atmosphere that accompanies authorship and learn how to navigate the editing process in a professional manner. Incorporating scholarly thought and responsible editing into publication procedures takes on a real world learning experience when students contribute to Wikipedia. Heightened awareness of author expertise and reputation are elicited when students are required to edit existing content and a sense of scholarly pride can be elicited upon publication of new articles. Wikipedia invites properly schooled students to engage in an age old discourse on truth and verifiability. It is the least that will be asked of the future authors of the information epoch.
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Assessing the Impact of Cloud Computing and Web Collaboration on the Work of Distance Library Services

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Abstract
Cloud computing and Web collaboration are shaping twenty-first century libraries. These two developments seem to be behind the newest developments in library services and are driving library automation. The two are impacting library work by providing the library administrator with opportunities, especially for greater synergies among various individuals over dispersed locations. While the literature indicates ambivalence about these twin developments among library and information professionals, the administrators of distance library services have no choice but to engage in the use of cloud computing technologies and web collaboration in order to remain relevant to users. Unfortunately, in doing this, distance services librarians will need to trade off ownership and control, trusting outsiders, while teaching users to be critical of the information gathered from collaborative sources.

Introduction
Cloud computing and Web collaboration are transforming twenty-first century organizations, and libraries are not excluded. All around the globe more organizations, including libraries, are using cloud computing enabled Web-based services to organize events or groups, to accomplish their missions and to get work done. This is not surprising as both cloud computing and the emerging Web based services provide the modern organization with opportunities for greater synergies among various individuals over dispersed locations. So pervasive are these two developments, that they are driving the latest developments in library services and automation.

In the literature, both topics are receiving recent attention from librarians. Despite this fact, the Library Literature and Information Science Index for February, April, and June 2009 reveal fewer than ten articles discussing cloud computing and its effect on libraries. Zero such articles discussed the concept of Web collaboration. Yet, the trends of cloud computing and the emerging Web collaboration services are so important that this century may well be known by future information technology historians as the social or collaborative software revolution.

Seeing that there is a lack of literature exploring the impact that cloud computing and Web collaboration are having on twenty-first century library work, it is necessary to identify the several changes that these two developments are sweeping into libraries. To begin, a conceptual understanding of the two concepts are important. As such, this papers moves to conceptualize the developments and their effects on the library community in general, and on distance library services in particular.

Cloud Computing
Cloud computing, a model of computing widely utilized today, is one of the latest buzz words in the computing industry (Hartig, 2008). Its recent popularity belies the fact that cloud computing is not yet precisely understood. Experts are still attempting to arrive at a consensus about the definition of cloud computing. In fact, the research and exploration of the concept is still in the embryonic stage (Knorr & Gruman, 2008). The concept is yet to be fully explored by academics (Lohr, 2007). In order to facilitate the academic exploration and development of research in this area, two major information technology companies with vested interest in such computing, have announced collaboration in offering resources for selected universities to utilize in developing knowledge in the field (Lohr, 2007).
Despite the lack of a precise definition, approaches to explaining the concept usually apply the imagery of the “cloud” derived from the traditional symbolic representation of “the Internet or some large networked environment” (Hartig, 2008, para. 4). Also used in explaining cloud computing is the idea of the outsourcing of computing resources. Generally, users of cloud computing use either a free “subscription-based or pay-per-use service that, in real time over the Internet, extends IT’s existing capabilities” (Knorr & Gruman, 2008, para. 3). As Harris (2009) puts it, “the cloud, or cloud computing, refers to the use of Internet servers to provide applications, storage, and processing power to smaller Web-connected computing devices” (para. 2).

The idea of cloud computing is modeled in three distinct ways. It can be conceptualized as the outsourcing of computing infrastructure, for the storage of client data and applications that are accessed via a remote server (Hosch, 2009; Knorr & Gruman, 2008). Cloud computing can also be conceptualized as the Web-based hosting of software, where users do not need to consider upgrading hardware or software because of new releases (Knorr & Gruman, 2008). It is also referred to as the provision of a computing platform where users can build their own applications for use by others through the Web (Knorr & Gruman, 2008). These approaches to the concept of cloud computing however, mainly examines the concept from the perspective of the user, whether a company or an individual. With cloud computing, those who either use the services are not concerned with the maintenance or management of hardware or software (Hartig, 2008). From the user’s perspective, cloud computing simply provides for the sharing and use of applications and resources on a network environment to get work done without concern about ownership, management, and maintenance of the network’s resources and applications.

Cloud computing can also be defined from the perspective of the providers or suppliers of cloud computing. According to Jaeger, Lin, and Grimes (2008), “cloud computing infrastructure resides in a large data center and is managed by a third party, who provides computing resources as if it were a utility such as electricity—accessible by anyone, anywhere with an Internet connection” (p. 3). Current providers of cloud computing are “delivering a slew of cloud-based services, from full-blown applications to storage services to spam filtering” (Knorr & Gruman, 2008, para. 4).

Cloud Computing and the Library Community

With these emerging perspectives, it is useful to look at the current significance of cloud computing to libraries. Since the emergence of the World Wide Web, the library and information profession has predicted a future where libraries may not own their resources (Lancaster, 1997). Predictions suggested that the library serving future users may be referral points to “potentially appropriate points in a vast network of resources accessible through the internet or its successors” (Lancaster, 1997, p. 27). Library automation trends have realized these predictions today. Today, libraries are connected to the systems of others including vendors, far-flung networks, full-content databases, and of course the Internet” (Cohn, Kelsey, Fiels, & Salter, 2002). Through current library automation practices, many libraries are already unknowingly engaged in the use of cloud computing services. As Cohn et al. (2002) illustrate, libraries use database vendors or integrated library system providers who provide external servers to host library software and data. This is one such illustration of library automation that would constitute cloud computing services. Consequently, cloud computing is currently enabling librarians to shift from the paradigm of ownership and maintenance of resources towards the provision of access to information maintained and controlled by others.

Cloud computing services have been implemented as a result of the commitment of librarians to focus on the mission of provision of access to resources rather than the mission of collection, preservation, and ownership. As Potter (2008) declares, “it is a professional ethical imperative that good librarians will offer the best information solutions to people, even if those solutions can be obtained without direct use of proprietary resources of the library” (p. 8).

To assess the impact of cloud computing on the library community, a study of the literature available in EBSCO’s Library, Information Science & Technology Abstracts with Full Text was undertaken in November, 2009. A broad search revealed the term cloud computing returned 67 results. When narrowed
to a subject search, results dropped to 54 results.

Within this literature that covers the subject of cloud computing, one can find a skeptical library professional discourse. Many opine that cloud computing technology has benefits and disadvantages. In fact, in recent times, there has been a number of professional articles published that offer a critical discourse on the application of current and modern technologies in libraries. In 2008, *Journal of Library Administration* Vol. 47 Numbers 1/2 provided critique of librarians using Google services under the theme the “Googlization of Libraries”. Leckie and Buschman (2009) provided a more general critique on the application of information technology in libraries. With the current rise in the critical discourse on libraries using and depending on modern technologies, one finds that, even though libraries are already involved in aspects of cloud computing, there is not a consensus that cloud computing is the direction that libraries must pursue without critical evaluation.

In terms of advantages, the professional literature is clear that cloud computing allows libraries to get attractive benefits. Buck (2009) cites cloud computing as having the advantages of allowing libraries to reduce “information technology support and expenditures, provide system access regardless of location or device, and multitenancy” (p. 9). Breeding’s (2009) list of the benefits of cloud computing technology includes the fact that libraries can reduce the constant maintenance of hardware involved, the costs involved in renting space from an external data center, and problems that inevitably occur with virtualization during high usage. Truitt (2009) also recognized that by outsourcing Web electronic mail to Google, his institution could possibly save around CAN$1,000,000 annually without having email with advertisements.

Despite recognition of the advantages, library and information professionals are also wary that the technology does not come without issues and concerns. The disadvantages of cloud computing according to Hastings (2009) is that libraries using these technologies must be willing to take risks, as “security issues are of concern with the current system” (p. 47). Hastings further suggests that libraries using cloud computing technology will have to understand that the “rights of ownership regarding publicly available data” becomes an issue as well as the “reputation of the server, and the ability to transfer or even remove data” (p. 47). Buck (2009) also sees data storage, privacy, and security issues as major concerns.

Libraries also have to worry about the permanence of such data stored or made available in the cloud. Truitt (2009) raises the issue of ownership of data with cloud computing in his comments on Amazon's deletion of illegal copies of the books *1984* and *Animal Farm* from subscribers' Kindle e-book readers.

Truitt (2009) further opines, in a rather sarcastic way, that this “notion of signing over to someone else’s care—for little or no apparent cost—our basic services and even our own content (our stuff) is very appealing” (p. 107). For him, the library profession should be responsible for its own services and for the content with which “we have been entrusted, a duty that cannot be shrugged off by simply consigning our services and our stuff to the cloud” (p. 108). He recognizes that doing this could potentially damage the credibility of the profession.

Consequently, cloud computing is an unresolved area of concern and debate among the library profession. While librarians have the mission to implement the best solutions to serve the information needs of its clients, there is ambivalence as to whether cloud computing technologies allow for the best solutions to modern information needs of users. This ambiguity is less prevalent in the discussion of the next concept.

**Web Collaboration**

Unlike cloud computing, Web collaboration is a less ambiguous concept to define. Web collaboration can otherwise be referred to in varied terminologies such as Web enabled collaboration or Web- based collaboration. Some scholars also use the term e-collaboration or ICT enabled collaboration (Fong, 2005).
However, for the purpose of this paper, Web collaboration will be used, as it is a more precise term that refers to the collaborative use of Web based services and tools to execute tasks. In other words, Web collaboration gets work done with others through the assistance of Web-based services, software, or applications. Work here refers to productive activity or activities intended to achieve or produce results, especially in pursuit of a goal or objective.

Collaboration is not a new term or practice by human beings. Long before technologies, people engaged in a process whereby “individuals and/or groups work together on a practical endeavor” (Fong, 2005, p. vi). In fact, collaboration has always been “a fundamental feature” of every organizational type. What has changed is that today’s information and communication technologies (ICT) provide support for new types of collaboration through “network formation and support” (Fong, 2005, p. vi). This new ICT enabled collaboration has become an important area of study. While human collaborative effort has traditionally been face to face, ICT enables collaboration “on a virtual dimension” irrespective of “time and location” (Fong, 2005, p. vi).

The Web aside, collaboration is a fundamental issue in modern times. It implies changing how organizations function, as modern collaboration removes traditional boundaries. With the synergy of ICT and collaboration, the modern construct of the virtual organization is created, one that has no geographical boundaries and where groups of access and share resources regardless of location (Fong, 2005). On another level, organizations traditionally operated with very clear demarcations and boundaries with distinct notions about members and outsiders (Stueart & Moran, 2007). Today, “the boundaries of many libraries, like other organizations, have become more permeable or fuzzy as they have collaborated with other libraries in joint ventures…and as they have used outsourcing as a means to attain from outside goods and services that they once produced in-house” (Stueart & Moran, 2007, p. 135).

In the business literature, increasing arguments are being advanced that organizations must expand their boundaries to collaborate with outsiders. There has been speculation that external collaboration with outsiders such as other firms and customers can result in improved services and expanded company markets (Von Stamm, 2004). The importance of collaboration outside of the organization is an issue that has received attention from several articles published in the Harvard Business Review in 2008. In the January issue, MacCormack and Forbath (2008) discussed the importance of companies knowing how to manage partnerships and collaboration for innovation. In the October issue, Cook (2008) discussed “The Contribution Revolution”, suggesting the merits of having volunteers build one’s business. In December, Pisano and Verganti (2008) discussed how managers can make decisions about what type of collaboration to select for their company. In general, these and other articles reveal the assumption by today’s management thinkers that collaboration is important to the modern organization and the organization of work.

Collaboration with both customers and outsiders using ICT has truly become the modus operandi for organizing work in the twenty-first century. The collaboration concept is affecting how companies organize their internal human resources. New forms of organizations are emerging in the business world, where the human resources are organized into communities that are “collaborative and open rather than traditionalistic and closed” (Heckscher & Alder, 2006, p. 2). These new forms of organizations are emerging as industries become increasingly “knowledge intensive and more solutions oriented”, shifting to models where “people ‘work things out’ flexibly through discussion rather than relying either on arm’s-length market exchange or bureaucratic authority” (Heckscher & Alder, 2006, p. 2). Today’s “increasingly knowledge-intensive, solutions-oriented economy requires collaborative community” (Alder & Heckscher, 2006, p. 37).

Web collaboration is also a new phenomenon accompanying the changes in modern computing and the modern economic transitioning to knowledge-intensive industries. Its existence is remarkable, especially when one considers the early history of computing. During the 1960s and even up to the 1970s, very few people worked directly with a computer. In addition, society held negative attitudes towards computers, viewing them as unfriendly and uncaring machines which have the potential to displace human workers from employment. Computers were very expensive and the very thought that the average person could own a personal desktop computer in those days was considered unimaginable (Freiberger & Swaine, 2009). Within
four decades, both the attitudes and access to computers changed.

Contemporary attitudes towards and the actual use of the Web reflects growing global familiarity and comfort levels with computers. In 2007, it is estimated that approximately 1.25 billion people were connected to the Internet (Ray, 2008). Further, those who are connecting to the global network of computers are also creating communities for generating and sharing recreational, educational, and commercial information. Evidence of this is prevalent especially in social networking sites, where “millions [of people]…connected and formed communities of interests, for entertainment, business, or academic goals” (Ray, 2008, para. 1). As such, with social networking sites, millions of persons are forming virtual networks or teams around common objectives and interests. All this is possible because there is growing familiarity of people with computing technology and with using the Web to share information and interests. With a variety of free web services such as social networking sites and wikis that can be used to create inexpensive web presence and connect with other people, the opportunities for people to collaborate virtually are now exponentially expanding.

Not only is it easy to create a web presence for groups and organizations, but with current technologies viewers can generate feedback, edit or contribute to the Web presence of others. Such feedback and contributions on the web presentation of library services, projects and work may be helpful in building upon and improving library work, allowing for library automation beyond computerizing manual functions towards collecting the feedback from outsiders that will advance the library’s mission. Farkas (2008), on seeing this opportunity to utilize current popular familiarity with Web information sharing, suggests that the libraries connect with outsiders on the Web to collect the information that “resides in people’s heads” and benefit from the library’s outsider Web “community of users” supplying “feedback and contributions” (p. 50). These ideas find support in Wagner and Majchrzak (2007).

Wagner and Majchrzak (2007) argue that corporations must adopt collaboration practices and technologies in order to become “customer-centric”. According to the authors, a customer-centric organization makes “the needs and resources of individual customers the starting point for planning new products and services or improving existing ones” (p. 17). Customer-centricity for Wagner and Majchrzak, can be facilitated by the current Web technologies. They specifically recommend the use of wikis as such a tool for facilitating customer centricity in corporations. To them, “Web-based collaboration technology designed to allow anyone to update any information” on a company’s website are essential for bringing about a customer-centric business (p. 17).

Such technologies “enable customers to not only access but also change the organization’s Web presence, creating previously unheard of opportunities for joint content development and "peer production" of “Web content” (p. 17).

While much of the aforementioned observations and discussion are derived from the analysis of profit-making organizations, the ideas are applicable to libraries. In the twenty-first century, it is necessary for libraries to expand their markets and become more customer-centric. The way to do this is for libraries to adopt new technologies and network with “outsiders” who can help to grow and expand a library’s service, visibility, outreach and impact. Today, libraries have great opportunities through the emergence of Web-based services to facilitate greater synergies among diverse individuals over dispersed locations. Through the use of new and emerging Web-based services, librarians can organize collaboration in order to accomplish objectives and to get work done.

Frauenfelder (2007) suggests that computers and computing were originally created to facilitate productivity. Those who invented computers and the Internet never had in mind a vision to create machines to satisfy the human’s desire for leisure. Yet, the existence of the Web today transforms the experience of using a computer and getting work done into a more enjoyable experience. Productivity-related websites and the Web in general, connect “people to each other”, enabling people to have fun working and interacting with each other rather than with impersonal “machines” (p. 217). With these perspectives, library administrators can view the adoption of Web based collaboration and cloud computing as a motivator for getting library work done by making work more exciting and engaging for staff.
Impact of Web Collaboration Concepts on the General Academic Library Community

The library field is gradually accepting and moving towards the collaboration model. Historically, libraries have networked with other libraries for sharing bibliographic records and for providing interlibrary lending services. Today, libraries are moving beyond collaboration with other libraries. Apart from using Web-based services to collaborate, the profession is currently recognizing that in order to remain relevant in the twenty-first century, libraries need to collaborate with outsiders other than other libraries. The literature on libraries collaboration with outsiders is popularly discussed in reference to academic libraries. For Neal (2009), future academic librarians will need to “rethink [their] approach to collaboration to better support users” (p. 468). Duke, MacDonald, and Trimble (2009) present an example of how an academic library collaborated with marketing students to solve the problem of promoting and marketing their reference services. Langley, Gray, and Vaughan (2006) outline the advantages of collaborative work and projects in bringing new challenges beyond job descriptions and routine library work, while getting people together to solve problems beyond the confines of their “departments, libraries, or institutions” (p. 53).

These trends in organizing library work reveal that libraries today are increasingly open systems. According to Stueart and Moran (2007), “the libraries of today can be considered an open system that receives input from outside, absorbs it, transforms that information, and then transmits it back into the environment” (p. 55). In fact, in today’s world, there is no institution, nation, organization or community that can be considered a closed system. Drucker (1999) believes that managers of any organization must be aware that technologies developed in any industry are likely to be of importance to every industry. For Katz (2008), modern computing has facilitated a new world of challenges for libraries by bringing about ubiquitous access to information unrestricted by location. According to Katz:

The first 50 years of the IT revolution were preparatory. In essence, the race to miniaturize computers, put them on desktops, make them portable, and connect them to networks met the preconditions for a networked information economy. The invention of the World Wide Web and the widespread adoption of search engines—and in particular Google—have made the Internet a transformative medium. As James Hilton puts it: “We are on the cusp of a world in which everyone will have access not only to online information but also to information that traditionally was accessible only by going into a library …. Any information that one could desire will be but a click away.

The importance of having more than 1 billion people and nearly all published information online cannot be overstated. Such milestones suggest the arrival at tipping points—in the roles played by traditional libraries … No longer will students and other researchers be constrained by search techniques that are confined to the small number of subject descriptors supplied long ago by catalogers (p. 18).

With resources becoming digital and accessible outside of library collections, libraries are attempting to adapt to remain relevant. This is being achieved by libraries utilizing current technologies and providing access to digital resources from outsiders.

For centuries, libraries have been spaces facilitating the communication of ideas, experiences, and knowledge from one generation to another or between persons who share similar interests or causes. Today’s Web facilitates such exchanges in a variety of formats. Exchanges that take place are not confined to text, but can be in the form of audio, video, and photographs. In this sense, these services present a threat to the traditional use of libraries, as they provide users with access to content in a variety of formats, many of which may not be included in libraries or may not be organized and packaged in a meaningful way to meet users’ needs. In order to cope with this threat, libraries will need to reinvent services, tools and facilities to remain relevant, in a networked world, where information exists in a variety of formats. As Farkas (2008) argues, current technologies are connecting “people with common interests who are geographically distant” (p. 50). These technologies can also be applied to connecting “people around local interests” and to collecting “local
knowledge more effectively” (p. 50). This connecting of people based on their interests to a variety of sources in a variety of formats, including connecting readers to authors, is well within the traditional mission of libraries.

**Impact of Both Concepts on University Education and the Distance Library**

In the literature on distance library services, very few articles deal with the impact that the concepts of cloud computing and Web collaboration will have on distance education. Most of the information has to be extrapolated from literature that generally discusses how the twin concepts are impacting university education. In this regard, distance learning is most vulnerable to Web computing and collaboration trends. Higher education in the twenty-first century is being “forced to reach outside the physical boundaries of the university or college campus [as] technological change is impacting the delivery of education to distance adult learners” (Niemi, Ehrhard, & Neeley, 1998, p. 65). According to Bonk, Kim, and Zeng (2004), in today’s context of higher education, the Web is a “tool for virtual teaming or collaboration, critical thinking, and enhanced student engagement…” In the modern higher education context, using virtual learning environments are becoming mandatory and libraries now need to support this new context for learning (Brophy as cited in Wusteman, 2009, p. 219). To support the virtual learning and research environment, library services now need to be integrated around virtual group workflows (Wusteman, 2009).

Subsequently, the administrators of distance library services need to adopt the new Web and its opportunities to create virtual teams and engage its users. This is important as “with the possible exception of networked databases, nearly every traditional product and service offered by academic libraries is incompatible with educating at a distance” (Wolpert, 1998, p. 29). However, the new technologies allow for an opportunity for distance library services to redefine themselves in order to support the new ways in which students are learning and faculty are discovering knowledge and conducting research. It has therefore become critical that distance library services are integrated into the way that students learn and researchers or faculty work. As much of this work is online and collaborative, library services in Web collaboration or virtual collaborative spaces will need to become more customised and supportive of groups that work together (Wusteman, 2009).

Today’s workflow of both students and faculty reveal growing openness to cloud computing and Web collaboration. Young (2008) speculates that within five years Web-based computing will transform “how students study, how scholars do research, and how college information-technology departments operate” (para. 5). Young provides a synopsis of how students are bypassing the library and its resources to complete their work and collaborate via distance using online document sharing services to complete their tasks. “Such virtual collaboration is a key benefit of running something like a word processor on the Internet instead of on an isolated PC [where] [s]tudents can easily ask parents or faraway friends to edit their term papers remotely without having to send clunky attachments” (para. 8). “They can just log into Google Docs, or Microsoft’s Office Live or some other networked service, from any location” and “cloud-computing tools make it easier for professors to collaborate with colleagues on scholarly papers, too, supporting the trend of interdisciplinary research” (para. 9). With users using cloud and collaborative software and creating virtual collaborative spaces, the challenges for the future of support library services beyond the institutionally provided virtual learning environment is already evident.

One such challenge is the issue of privacy and freedom from advertisements. Companies that provide collaborative software and cloud computing services collect data about people. Some are worried that companies like Google that collect data about users of its services “may be tempted to mine that data” in the future and “sell it to advertisers...” (Young, 2008, para. 20).

The issue of collaboration and the use of Web services to collaborate raises issues of credibility in the library profession. How can librarians teach users to be critical and concerned about those who provide information, when librarians themselves are not critical of whom they collaborate with to make information and resources more accessible to users? Potter (2008) points out that when considering the trends of collaboration and cloud computing Web services, librarians must remember that these technologies are not neutral and may have objectives that are antithetical to the mission of libraries. Potter further raises the issue
that if libraries collaborate with Web services like Google and seek to integrate their services into these spaces, their actions can be seen as library endorsement of the company’s service or product. Potter suggests that when librarians engage “learners in a space not controlled by the library, [librarians] are condoning and promoting the use of that space, however indirectly” (p. 12).

Potter also points out that the library’s pursuit of a collaborative model with free Web based services, makes digital technology seem “the centerpiece around which all knowledge and ‘progress’ revolve” (p. 16). This completely destroys the traditional model of the university library, threatening the old adage that the university is a set of buildings around a library. Today, the modern adage would be changed to the idea that a university is a group of people connected by and around technology.

In the past libraries created and owned their own systems for allowing users to find information. So great were library advances that Yates (2000) documents that libraries through Dewey were able to invent the vertical file system for storing and retrieval of information, an innovation that librarians later exported to businesses. However, today, librarians are less shaping their own services and systems, but are being transformed from outside. Currently, libraries spend on expensive technologies to assist users in locating information neither owned by the library or available in the library’s own stacks. Then librarians teach users how to use capitalist driven technologies to access these information sources (Potter, 2008).

For the distance library, the situation is even more pronounced. Since the distance library’s users are not located on the campus, they only access library services through the links provided by their library through another’s interface, after which, they gain access to information “through the remote access authentication provided by their institution” (Potter, 2008, p. 17). The entire process makes the library seem invisible, and makes access to information sources seem to be a function of the institution’s information technology department.

Utilising outsider services and collaborating with outsiders has risks. The approach of “openness” in collaboration with outsiders does not come without risks and organizational vulnerability such as “web site defacing, destruction of intellectual property, and general chaos” (Wagner and Majchrzak 2007, p. 17). Despite these dangers “an increasing number of organizations are experimenting with the use of wikis and the wiki way to engage customers” (p. 17).

It is not entirely disadvantageous for libraries to adopt cloud computing and Web collaboration. Cloud computing and Web enabled collaboration are expanding and can augment the scope and services provided by librarians. The two concepts allows for libraries to reach out to the growing Internet users through libraries offering the “equivalent” of traditional services online. Offering online services to today’s consumers of Web information allows the library to better be able to compete with alternative and more attractive ways of finding information than using the traditional library collection (Sadah, 2007). With today’s library’s users accessing the information needed in the comfort of their own personal or customized spaces, there is a demand for libraries to adopt the communication and information tools and services that users are accustomed to in order to meet their new needs (Sadah, 2007). Many of these tools and services employed will not be owned by the library but are necessary to carry out the enduring work of making library collections and services known and accessible to users. In addition, the use of online services to reach users will involve collaboration with organizations and others outside the library community. Also evident in this, are great opportunities to the distant student in remote areas where accessing library facilities are virtually nonexistent to use Google Scholar, then end up onto the library’s online database to find complete citations plus full text to support their papers.

Apart from the opportunities that the Web provides for organizations to benefit from outside collaborators, there are also some lessons that the managers of distance library services can learn. Firstly, the existence of web collaboration demonstrates that face to face contact is not a necessary condition for collaboration to take place. For instance, many persons contribute to Wikipedia, the largest online encyclopedias, and yet the many who do, may never meet each other face to face. Secondly, Web collaboration allows for libraries to be able to go to places where the patrons are and deliver relevant services
both where and when users need them (Farkas, 2007).

Niemi, Ehrhard, and Neeley (1998) outline that the distance library in the face of changing times are still in demand by distance adult learners, who still need assistance in conducting research and completing assignments. This work to support these learners is described by the authors as “ancillary services” involving the learners accessing library databases through their personal computers. “The [distance service] librarian’s role is to assist such learners by demonstrating how to use data services and how to narrow searches in the most efficient manner” (Niemi, Ehrhard, & Neeley, 1998, p. 66). In the twenty-first century, distance services librarians are urged to become educators and operate via collaborative relationships between learners and librarians (Burge as cited in Niemi, Ehrhard, & Neeley, 1998, p.69). Librarians offering distance services must be proactive in this age of ubiquitous computing. With competition from a variety of on-line information providers, distance services librarians cannot be complacent expecting their users to come to them. Instead, distance services librarians are urged to take “a more assertive stance” in marketing the benefits and the awareness of library databases and “of the potential rewards to be gained with a little patience and a personal computer” (Niemi, Ehrhard, & Neeley, 1998, p.72). Distance library services in the twenty-first century must also provide for “the distance adult learner’s education…some standard research protocols for electronic information access” (p.72).

Discussion

This paper collates the library and information professional literature on two very important and transformational trends. These are the new outsourcing of library automation and computing resources and the trend of getting library staff to work with outsiders using Web based services.

For libraries providing distance library services, utilizing the Web to offer computing resources will not have the same implications as physical libraries. For physical libraries, this type of computing means that libraries can purchase less software on library computers, providing users with Web based options for performing their tasks. For distance library services, this benefit may not be realized as library users may not come to its physical space to use such resources.

Instead, the computing that the Web enables, means that the work of the administrator of distance library services is to develop marketing plans and strategies to reach users of Web based services and resources for productivity in research, learning, and knowledge sharing. One role that library administrators can play is to ensure that their staff know about Web based software and how to use them. The library staff, in turn, will then be able to teach distance library users who may not know about these options. Library staff can also create online tutorials on how to use the Web based and collaborative tools and resources to enhance student or faculty productivity. In order to achieve these new objectives, distance library services will then require staff with curriculum designing skills, and in particular curriculum design for the mode of online education. Further, the library staff has to constantly keep up with, experiment and test new Web based services that emerge to understand how these can be applied to enhance the productivity of learners, researchers and faculty.

Collaboration has become a new managerial model considered and used by a number of organizations. Whether or not it is relevant for libraries desirous of maintaining their service free from tainted commercial interest is a crucial question to be answered. Utilizing the collaboration model in the past, librarians have only trusted other librarians. However, today’s wave of literature reveals the need to as well as the cases or experiments where libraries have collaborated beyond libraries.

In terms of the university library administrator, there is no choice as to whether or not one must use a collaboration model beyond the library. Collaboration is relevant for university libraries to remain relevant to twenty-first century changes to higher education, where virtual teaming and the use of the Web is being encouraged and pursued by university administrations.

The problem, however, is that by utilizing a collaboration model, librarians may lose credit for their work. The final results of a service utilizing the collaboration model may not be seen as emanating from or
being the initiative of the library administrator. If libraries already suffer a poor image of being irrelevant in a
digital age, collaboration with others to offer innovative services may be seen as being driven by the
outsiders and not librarians. The case of the distance service library is even more so, as currently such library
provides its services through a website, where users by clicking on links end up on the sites of others. To
even access scholarly resources paid for by the library, the user has to first go through the university’s
information technology administration in order to be authenticated.

With the current situation, libraries are not likely to be seen as central to the process of access to
information for learning, teaching, and research. Distance library services web page is just a referral point to
scholarly resources and to information that will enhance learning, teaching, and research. However, learning,
research, and teaching in the twenty-first century does not revolve around library use, especially if the library
in this case is visible only as a web page.

To resolve the problems that the distance library service administrator will encounter, it is necessary
for some restructuring to be undertaken. With more outsourcing of library services to computing providers,
distance library service administrators will have to strengthen their staff pedagogical skills to align staff to be
able to collaborate and take advantage of the collaboration with faculty.

The administrators of distance library services should also consider taking a look at Bell and
Shank’s (2007) Academic Librarianship by Design. In this book, the authors introduce the way forward in
the current situation of the marginalization of the academic library. Their approach is for librarians to
develop instructional technology and design skills, and approach the development and innovation of library
products and services with a new approach, recognizing the need to collaborate with outsiders. Accordingly,
the revitalized mission of the distance library service is to “integrate...into the teaching and learning process
in a way that enable faculty and students to achieve better balance in their research and use whatever tools
[are] most appropriate for that research whether these tools are coming from the library or otherwise” (p. 9).

Conclusion

The distance library, in light of current trends, will be an invisible entity, working behind the scenes
to provide access to information. The distance librarian on the other hand, will evolve into a faculty member
that collaborates with other faculty in delivering training to students, particularly with expertise in
information literacy. The distance library administrator will then have to manage two services. The first
service is the “behind the scenes” technical service of ensuring access to scholarly information outside the
institution’s library (without really getting the credit for this work). The second more publicly visible service
that the distance library administrator will also manage is that of faculty collaboration in information literacy
or curriculum design.

The theoretical perspective of librarians in providing distance library services in the age of cloud
computing and Web collaboration is to use external or outside providers of services and technology and to go
where the users are and integrate the services that the library offers into the workflows of library users. With
the virtual learning environments (VLE), librarians moved to get links to the library’s resources and services
placed within the VLE where students and faculty interact (Cohen, 2002; Markland, 2003). However, if the
users are moving outside of the VLE to get their work done, the distance service library will have to adapt to
remain visible to its users. Currently, the profession has only one view about how to remain visible when the
users are plugging into the cloud and collaborating via the Web to get their work done. Increasingly, the
distance library services are focusing on teaching and collaborating with faculty. In terms of partnering with
the new commercial providers of the new work, learning, and knowledge-producing environment, librarians
are still ambivalent. Librarians understandably fear that mixing with such external providers of the new
environment may bring the reputation of the profession into disrepute or clash with the profession’s mission.
References


A Comprehensive Plan for Library Support of Online and Extended Education

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Abstract
Acknowledging Arizona State University’s long-term goal of 100,000 students in online degree programs and recognizing the eight new 100% online undergraduate programs slated to come online in 2010, ASU Libraries is planning for the continued integration and relevance of the library to online students and programs. During the summer and fall of 2009, the ASU Libraries Task Force for Online and Extended Education met to develop the elements of a Comprehensive Plan for Library Support of Online Programs. The plan includes: 1) guiding principles for library support of online and extended education; 2) a needs assessment and environmental scan; and 3) a sustainable and scalable plan for library support of the online programs. This paper discusses the process of developing the comprehensive plan.

Introduction
Arizona State University is enthusiastically entering the online education market. In developing this market strategically, the university is following national and global trends. Online Nation, a report following five years of growth in online learning, reports that two-thirds of higher education institutions offered online courses (Allen & Seaman, 2007). Online learning is growing rapidly as universities become “edgeless” and are defined primarily by their functions of teaching and research rather than by their physical campuses (Bradwell, 2009).

Universities list several reasons for developing online programs. The U.S. Department of Education listed meeting student demand for flexible schedules (68 percent) as “the most common factor” in making the decision to provide online courses. Other reasons included providing access for students who would otherwise not have access (67 percent), making more courses available (46 percent) and seeking to increase enrollment (45 percent) (Parsad & Lewis, 2008). Financial incentives are also a motivation for developing online programs. Online programs help universities contain costs by increasing enrollment without additional expenditures for classroom space and facilities management. Additionally, online programs can enroll more students per course section than a traditional course, making them an enticing option for revenue generation when resources are taxed. At Arizona State University, online students pay the same tuition as on-campus students while minimizing demand on resources. Considering student demand for flexibility, and the potential for enrollment growth and revenue generation, it is not surprising that universities including ASU are rapidly creating new online degree programs that are totally online.

Though current enrollments are low in the new 100% online programs (1,500 students) at ASU, they are growing and new programs are being created quickly. ASU currently has thirty-five fully online programs; an additional eight programs for freshmen are slated to launch in fall 2010 (For a current list of online programs, see http://asuonline.asu.edu/programs). However, growth of online programs presents a challenge for the libraries. As we seek to maintain services to this growing distance population, we must consider the fiscal realities of providing services and materials to students who may live far from an ASU campus, including library instruction, reference and research support, interlibrary loan, electronic
document delivery, and shipping books. ASU Libraries emphasizes that the library must support online programs, but limited resources dictate that the library cannot be the gratis partner in the online enterprise. The challenge is to develop a model of library support for online education that is sustainable, yet will support the principles of academic inquiry and access that are embedded in the ethics of the academic library.

ASU Libraries also must consider library services to the growing number of online courses in face-to-face degree programs. For example, 16% of student FTE enrollment at one college (ASU’s New College of Interdisciplinary Arts and Sciences) is currently online (fall, 2009). The percentage online for winter is 100% and for spring 2010 is currently at 24% online. However, online numbers at this college are likely to increase given the new Psychology online degree beginning fall 2010 (personal communication, Rob Taylor, December 15, 2009).

**Background**

ASU Libraries began its support of online education by partnering with a university provost’s initiative designed to boost retention. Several years ago, librarians created two library instruction modules for an introductory course for first-year ASU students called ASU 101. All freshmen must take this one-credit course that serves as an introduction to the University and college-level study. In 2009, with new 100% online undergraduate programs emerging, the librarians needed to create a new online version of the ASU 101 material for students who might never set foot on a campus.

A university-level task force was reconvened to adapt the previous ASU 101 content and create new content suitable for online students. As with the original ASU 101 course content, librarians again worked on two of the five ASU 101 course modules: “Academic Integrity” and “Using ASU’s Libraries for Academic Research.” All course modules follow the same format with an overview in Adobe Presenter, hands-on practice, an online discussion, and a quiz. In addition to the library created course content, a visible link to the ASU Libraries is located in the ASU 101 Blackboard course shell.

In response to the increased institutional emphasis on online education, in the summer of 2009, ASU Libraries appointed a Librarian for Online and Extended Education. Soon thereafter the Online and Extended Education (ONYX) Task Force was formed to make recommendations that could have a major impact on the information literacy and access to library materials of a growing portion of ASU’s student body, those enrolled in online courses and degree programs.

**The ONYX Task Force**

ASU Libraries charged the Online and Extended Education (ONYX) Task Force to address the new university focus on online instruction and also suggested potential members and their functions. ONYX is comprised of library personnel with skills in instructional design, cyber-infrastructure, access services, subject liaison knowledge, marketing and public relations, and data analysis and assessment. With six members in place, the ONYX task force was charged with developing a comprehensive plan for library support of online education.

In order to organize the work of the ONYX task force, a “Draft Team Charge” document was created (see Appendix A).

**Development of the Comprehensive Plan for Library Support of Online Programs**

During the summer and fall of 2009, ONYX met to draft a team charge and to develop the elements of a comprehensive plan for library support of online programs. As a first step, the Librarian for Online and Extended Education interviewed university and library administrators to determine the institutional priorities and structure of ASU’s Online and Extended Education and to set goals for the task
force. From the interviews, a methodology emerged in order to develop the *Comprehensive Plan for Library Support of Online Programs*:

1) Craft guiding principles for supporting online students and programs;
2) Conduct a needs assessment and environmental scan; and
3) Recommend a sustainable and scalable plan for library support of online and extended education.

**Statement of Support of Online and Extended Education**

One of the first committee tasks was to develop guiding principles for ASU Libraries support of online and extended education based on the Association of College and Research Libraries’ *Standards for Distance Learning Services* (Association of College and Research Libraries, 2008). In order to design the statement of support the group used a multi-voting process that provides a rank-ordered list showing the relative importance of each item. Group members voted on statements that describe the ideal set of services and principles when providing library services to online students and programs. Using the statements generated in the process, the team drafted a *Statement of Support of Online and Extended Education* (see Appendix B). These guiding principles refer to several realms of library support for online and extended education. These include academic inquiry, access equity, the librarians’ role, infrastructure needs, and the notion of information as an expanding commodity.

One of the most discussed issues in the task force was the notion of access equity. ACRL’s Access Entitlement Principle states that

> Every student, faculty member, administrator, staff member, or any other member of an institution of higher education, is entitled to the library services and resources of that institution, including direct communication with the appropriate library personnel, regardless of where enrolled or where located in affiliation with the institution (ACRL, 2008, executive summary, para. 1).

ONYX also considered ASU Libraries’ strategic plan in drafting principles. Goal 1 of the plan directs the library to “develop a nationally distinctive suite of virtual and physical services, convenient and timely, in support of all ASU users regardless of location.” (Arizona State University, 2009). Clearly, if task force members were to ground guiding principles in the library strategic plan in addition to the ACRL guidelines, the issues of equity in our services to distance students needed to be addressed.

One of the problems in creating equity in this environment is the inability to identify the students who are enrolled in 100% online programs due to limitations in the student record management software. ONYX partnered with the University Technology Office who will work with the Library IT team to identify distance education students in patron records. This is the first step in being able to provide physical materials for these students. The second step, not yet undertaken, is to identify funding for the expensive interlibrary loan, electronic document delivery, and shipping of print materials.

ASU Libraries also faces issues is differentiating between “local” and “geographically isolated” distance users. A portion of students taking online classes are assigned a campus designation, though they are attending courses in a remote location. The ASU Libraries will deliver needed articles electronically to any student identified as a distant student. However, if the University’s registration system identifies a student’s location based on their home campus, the system is unable to identify those students that are truly at a distance. Since the libraries do not currently scan articles when the journal is located at the student’s home campus, distance students must take several additional steps and wait longer for their articles. Library staff must verify a student’s status and actual location causing delays in delivery.

The *Statement of Support of Online and Extended Education* document will be reviewed again after internal and external assessments are completed in January 2010 and will guide ONYX’s recommendations for library policy development for online and extended education.
Environmental Scan and Needs Assessment

To complete an environmental scan and needs assessment (Jerabek & McMain, 2002; Steadham, 1980), ONYX focused on four areas: 1) a database of online instructors cross-listed with subject librarians and their campus assignments; 2) a survey to gauge awareness of library services among online faculty; 3) a database of online library support at peer institution academic libraries; and 4) interviews with 100% online program directors and instructional designers.

Database of Online Instructors, Librarians and Campuses

ONYX was surprised to discover how many new online courses and programs were being developed. Subject librarians lacked a complete picture of all the online courses being taught in their subject areas and needed updated information about new courses. A student intern scanned the online class offerings using the fall class schedule, and imported the specifics of each online course into a spreadsheet. The list was sorted by campus, and by subject area, and sent to all subject librarians and administrators with a link to the Online Programs LibGuide (see http://libguides.asu.edu/onlineprograms). ASU offered 919 online course sections to campus-based students, with enrollments ranging from 10 to over 700 students per section, for a total of 38,365 online seats. ONYX hopes to make the database an ongoing element of the toolkit we develop for subject librarians who support distance education programs.

Survey to Gauge Awareness of Library Services Among Online Faculty

To focus on support of online programs it was necessary to uncover what the faculty knew about the resources at ASU Libraries. Were the faculty, “who will be designing the courses, determining the content, and creating the assignments…” (Jerabek & McMain, 2002) aware of library services? Thomsett-Scott and May (2009) found that that lack of awareness of services was the major issue in library support of online resources. In contrast, Ryckman, Long, and Yedinak (2009) surveyed faculty that taught both on and off-campus and found that most faculty were aware of library services. ONYX created a brief, open-ended survey for online instructors. The survey goals were 1) to identify numbers of faculty teaching in various types of online programs; 2) to assess awareness and use of library services as faculty prepared or revised their online courses; 3) to know which library services would be helpful to online students as they completed their instructors programs; 4) to give faculty the chance to describe barriers they experienced in integrating library resources into online courses; and 5) to have faculty identify barriers their students experienced while completing assignments (see Appendix C for survey instrument).

We sent surveys to all ASU instructors (n=647) that had taught at least one online class during 2009. The number of surveys returned totaled 157, a response rate of 23%. Most online instructors, 79% (n=114) taught online courses in degree programs that were not 100% online. Only 21% (n=31) taught in 100% online programs. Preliminary analysis reveals that many respondents do not utilize library services due to lack of awareness.

- 73% had not used subject librarian research assistance.
- 73% had not used Ask-a Librarian chat.
- 70% had not used streaming video;
- 67% had not used online library tutorials,
- 59% had not used e-books, and
- 48% had not linked to e-journal articles.

The task force will further analyze the survey results, including extensive open-ended comments, to make recommendations that will increase awareness and use of library services to this group of instructors.
Database of Online Library Support at Peer Institution Academic Libraries

In order to discover useful models employed at peer institution libraries, ONYX compiled best practices in supporting online learning. The team adapted and expanded Nicholas and Tomeo’s (2005) survey to determine best practices at fifteen peer institutions. We surveyed peer institutions approved by the Arizona Board of Regents, selected for their analogous mission, academic programs, and student demographics:

University of California-Los Angeles
University of Connecticut
Florida State University
University of Illinois at Urbana-Champaign
Indiana University-Bloomington
University of Iowa
University of Maryland-College Park
Michigan State University
University of Minnesota-Twin Cities
Ohio State University-Main Campus
Pennsylvania State University-Main Campus
Rutgers University-New Brunswick
The University of Texas at Austin
University of Washington-Seattle Campus
University of Wisconsin-Madison

ONYX created a database that lists demographic information for each peer institution and the results of telephone and email interviews of distance education library faculty. Interview participants answered the following questions: 1) Describe your distance education program, 2) How do you promote your online services? 3) Is there a library fee for online students? If so, how much?; and 4) Do you perceive/foresee expansion issues? ONYX is currently analyzing the best practices at these institutions and will use the information to make recommendations about developing library policies for online and extended education. The database is slated for completion in December 2009.

Peer institution interviews have revealed some steps libraries are taking to be visible and relevant. For example,

- Libraries are streamlining online services by reducing the authentication and links that students must negotiate to access subscription databases.
- Libraries are exploring customized library pages in course management systems such as Blackboard and Sakai.
- Libraries are using software like Jing, ScreenR and Captivate to create online library tutorials.
- Librarians are writing newsletters to share research tips and library resources with distance students.
- Libraries are providing chat services during extended hours or 24/7.

Interviews with 100% Online Program Directors and Instructional Designers

ASU uses a model where growth and development of degree programs exist within individual colleges, schools and departments. ONYX wanted to discover departmental expectations of the library from the departments creating the online programs. To identify plans for future growth, and the potential for expansion of online education in various subject areas, ONYX contacted the various colleges at ASU that have actively pursued online education degree programs. ONYX interviewed instructional designers from the College of Liberal Arts and Sciences (CLAS), the College of Teacher Education and Leadership (CTEL), and the New College of Interdisciplinary Arts and Sciences (NCIAS).
Initial discussions with instructional designers demonstrate the importance of copyright concerns in an online environment. Maintaining copyright compliance is one of the most challenging issues when dealing with information resources in the online environment. The instructional designers also commented on the variety of platforms through which online instruction is currently offered at ASU. Blackboard, the official course management provider at the university, is not the only course management system being used at ASU. Some designers use Moodle and Sakai, and in one specific case, a department created their own system built on Flash. Absence of course management software standardization creates a challenge for librarians designing online instructional tools. For many lower-level courses, deans and directors are considering having students purchase commercial “comprehensive” packages that include videos, a course management system portal, a textbook and course readings.

ONYX plans for future discussion with leaders from online programs in engineering and business, which enroll large numbers of students in their 100% online programs.

Sustainable and Scalable Plan for Library Support of Online and Extended Education

ONYX will complete the first two plan elements by the end of January. They are 1) the Statement of Support of Online and Extended Education and 2) the environmental scan and needs assessment. The third plan element, a sustainable and scalable plan is slated for completion in March 2010. Themes emerged from the needs assessment that will inform the financial model as well as other elements of the comprehensive plan. Among these themes are: resources needed to support subject librarians, effective communication channels with the online community to raise awareness of library services, and a financial model to support library services and information resource delivery.

The comprehensive plan will create a mechanism to assist subject librarians in supporting distance education. Currently, subject librarians provide instruction and research assistance to our campus-based programs rather effectively, but support in the 100% online environment needs strengthening. Lillard, Norwood, Wise, Brooks, and Kitts (2009) describe the online classroom as an opportunity for embedded librarians to present personalized service that is customized for a subject specific curriculum. One model employed at Capella University allows embedded librarians the opportunity to review online course syllabi in order to “identify courses that might benefit from the library’s instructional services” (Veal & Bennett, 2009). This approach could strengthen subject librarian support of online programs.

Additionally, subject librarians need knowledge and skills to provide instruction and research assistance to online students and faculty. A toolkit will inform librarians about best practices in online program support. Current toolkit contents in development include:

a. A current listing of online classes matched to subject librarian.
b. Directions for persistent linking in multiple databases.
c. FAQ’s on copyright in a digital realm.
d. A best practices document for embedded librarianship.
e. The online programs LibGuide.

Communication is another element of the comprehensive plan. From our interviews and meetings with online program coordinators and instructional designers, we discovered avenues for communication with online programs, instructors, and students. As the model changes from the one-on-one transactions of the past to a many-to-many model of the present (Johnson & Trabelsi, 2008), the ASU Libraries will seek new ways to connect with online students. An example of many-to-many communication is the ability to make announcements regarding library services in the course shell developed the College of Liberal Arts and Sciences’ (CLAS) online programs. The instructional designer for CLAS has also linked to information about the ASU Libraries’ streaming video collections in the course shell. Social networking tools, such as ASU on Facebook (http://www.facebook.com/arizonastateuniversity) are another possible venue for communicating with students who are taking the same course and also for communicating with the online instructor teaching the course.
The most challenging aspect of the task force’s plan is the development of a financial model that will allow ASU Libraries to effectively serve our online students through extended Ask-a-Librarian chat hours, document delivery, interlibrary loan, and books by mail. That financial model must grow in proportion to growth in online student FTE. ASU Libraries may develop and market their online services and negotiate with colleges for fees for services.

**Conclusion**

The ONYX Task Force is nearly complete with the first two phases of its work, the *Statement of Support of Online and Extended Education*, and the environmental scan and needs assessment. An important picture of the degrees, programs, and faculty engaged in online instruction is emerging through this process. The third phase, a sustainable and scalable model for library support of online and extended education, will be complete in March 2010. In a decentralized structure, ASU Libraries must focus on building relationships with program directors, instructional designers, and faculty in individual programs. Through communication, planning, agility, and negotiation for funding based on online student FTE, the library will extend its influence to online degree programs.
References


Appendix A

ASU Libraries Task Force for Online and Extended Education (ONYX)
DRAFT Team Charge
August 31, 2009

PURPOSE
ASU Libraries’ Task Force for Online and Extended Education is charged with the following:

- Develop a statement of principles for ASU Libraries’ support of online and extended education.
- Explore and define a model of library services for online programs and instructors that is scalable and sustainable.
- Address issues of equity for all campuses/all students.

With ASU’s long-term goal of 100,000 students in online degree programs, the library’s decision to focus on supporting the online initiative is a timely one. Though enrollments are low, they are growing rapidly. For example 14% of current (Fall 2009) student FTE at West campus’ New College is online students. Additionally, there are 919 sections of online courses currently being offered university wide, with enrollments ranging from below 10 to over 700 (38,635 online seats total). The ONXY Task Force has the opportunity to make recommendations that could have a major impact on the information literacy and education of sizeable portion of ASU’s student body.

THE PROJECT
ASU Libraries Task Force for Online and Extended Education will plan for library services for off-campus programs and extended education. We will describe ASU’s current online programs and inform and mobilize subject librarians to assess the information needs of these programs and their students. We will study other academic libraries to look for viable models of support of similar online programs. We will seek to define resources needed to support these programs. We will communicate with campus bodies engaged in online education and will promote library services to this community.

PRODUCT/DELIVERABLES
The product will be a Comprehensive Plan for Library Support of Online Programs at ASU. Elements will include 1) guiding principles; 2) an environmental scan; 3) a template for assessing information needs of online programs; 4) plans for delivery of collections and services; 5) abstracts of successful online library programs; and 5) recommendations for a sustainable model of online library services.

CONTEXT/OPPORTUNITY
ASU’s leadership has decided to enthusiastically enter the online education market. In developing this market strategically, ASU is following a national trend. Online Nation, a national report following five years of growth in online learning, reports that two years ago “two-thirds of higher education institutions” offered online courses (Allen & Seamen 2007). These online enrollments are growing at faster rates than traditional higher education student enrollments. ASU’s emergence into the online market will extend the University’s influence to a group of students that have been unable to pursue higher education on our campuses. ASU is targeting individuals in the military, transfer students from community colleges, and online high schools as potential candidates for new and existing online programs.

CONNECTION TO STRATEGIC PLAN
The work of the Task Force for Online and Extended Education supports the following elements of the ASU Libraries Strategic Plan:

People We Serve
- The ASU community will continue to grow and diversify (author’s emphasis).
- We will work collaboratively, efficiently, and quickly to best serve our customers needs within the Libraries and beyond the libraries’ walls.

Systems We Build
- We will employ the same research, discovery, and delivery technologies across all campus libraries.
• Library staff will build *new bridges and partnerships* to ensure that services and systems meet existing and future needs.

**Goals**

• Develop a nationally distinctive suite of virtual and physical services, convenient and timely, in support of all ASU users *regardless of location*. This supports ASU’s goal to become a National Comprehensive University and ASU’s goal of Access and Quality for All.

**ANTICIPATED BENEFITS**

ASU Libraries will remain a viable force for information literacy among off-campus students and students will benefit through enhanced literacy and ability for lifelong learning. ASU Libraries will be a leader among libraries in developing a sustainable model for library support of online programs. ASU instructors and students will know about library services that can enhance the online educational experience.

**AUTHORITY**

The Task Force serves under the direction of the University Librarian and the Library Administration Team.

**ASSUMPTION**

ASU Libraries will not be the free gratis service provider in the equation. The university is interested in increasing revenue and decreasing costs. ASU Libraries shares these goals.

**TIMELINE**

Comprehensive report will be submitted by January 2010.

**CUSTOMERS AND STAKEHOLDERS**

• ASU Distance Learning Students
• ASU Faculty
• ASU Librarians
• ASU Libraries’ Administrators
• ASU Online Program Administrators

**SUGGESTED APPROACHES**

• Outline current online courses being offered and target faculty.
• Provide tools to encourage subject librarians to assess current levels of participation of their students and faculty in online programs.
• Develop guidelines and best practices that can be utilized by subject liaison librarians to serve their respective programs.
• Contact other library exemplars to identify their barriers and solutions.

**DEFINE ASSESSMENT STRATEGY**

Explore possible measures to evaluate outcomes of library services for off-campus students.

**IDENTIFY THE TEAM**

**Reporting Relationships & Roles**

Leslee Shell reports to University Librarian Sherrie Schmidt, thus the team reports to Sherrir. We also communicate with the entire administrative team, the Library Services Council, ASU Librarians, and ASU’s Online and Extended Education Department. We send reports to the library administrative team and LSC.

**Skills and Knowledge Required On This Team**

Group members need skill in instructional design, cyber-infrastructure, interlibrary loan and other delivery models, marketing and public relations, data analysis and assessment.

**IDENTIFY & ALLOCATE RESOURCES**

Find institutions to benchmark or learn from. Define resources needed to fulfill our principles.

**TEAM COMPOSITION**

Draft Charge3 8/31/09
<table>
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<tr>
<th>Sponsor</th>
<th>Sherrie Schmidt, University Librarian</th>
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<tbody>
<tr>
<td>Leader</td>
<td>Leslee Shell, Librarian for Online and Extended Education, <a href="mailto:lshell@asu.edu">lshell@asu.edu</a>, 602-543-8566</td>
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</tbody>
</table>
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              | Ann Ewbank, Education Liaison Librarian, Ann.Ewbank@asu.edu, 602-543-8527  
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Arizona State University Libraries
Statement of Support of Online and Extended Education

Library Mission

ASU Libraries comprise settings, both virtual and physical in which to uncover, discover and learn. We provide seamless access to collections and services for students, faculty, ASU’s partners, and the community to promote the New American University’s goals of access, excellence, and impact. Our service-oriented staff supports virtual and physical environments that assure access to data, information, and knowledge resources, and strive to foster information competence and critical thinking skills.

Academic Inquiry

Academic inquiry and research is a vital part of a university education. Through inquiry students develop critical thinking skills that allow them to build on the academic enterprise and to become constructive and fruitful citizens. The academic library is a place where students may encounter, explore, and evaluate information. Arizona State University Libraries creates physical and virtual spaces where students may investigate ideas, delve into the literature of their discipline, and contribute to the academic discourse.

Access Equity

Utilizing the principle of “access equity,” students are not penalized because they live at a distance from campus. For example, undergraduate students need to evaluate information and choose wisely; graduate students may need to acquire theses or books to do competitive research. They must be able to acquire these resources for the process of academic inquiry and research to prosper. Access to library resources, personnel, and services, helps students achieve academic success and become astute consumers of information.

Librarians’ Role

Librarians have a unique role as facilitators for the process of guided inquiry. We aspire to be active participants in course development and to collaborate with faculty in acquiring and linking to resources, removing barriers for online research, promoting information literacy, and systematically developing simple and workable solutions to student exploration of literature and library resources. This means that we follow these principles in facilitating online learning:

- Electronic materials (books, journals, databases) are preferable to print materials.
- Resources that allow more than one user simultaneously are favored over single-user resources.
- Students can reach a librarian if they want individualized assistance.
- Assistance is available when and where students need it.
Appendix B

- Librarians will be trained to maximize service to unique student populations.
- ASU instructors, program directors, and instructional designers will have access to librarians for consultation and curriculum development.
- Library services will be actively marketed to all library users, including those in off-campus locations.

**Infrastructure Needs**

Creating and maintaining information systems that are understandable and easy to use for all our students is an expensive proposition; transparent access to high-quality information requires technology and personnel. With expanding online populations come expanding needs for delivery of documents and materials, additional acquisitions, additional staff, and sophisticated infrastructure. The ASU libraries will develop a business plan that will proactively support the growth of the University’s online programs.

**Information - An Expanding Commodity**

Because information is an expanding commodity, and because research continues to be an omnipresent facet of academic inquiry, ASU Libraries is pursuing a systematic approach to ensuring that all our students have access to the best quality information available.
Online Instructors Survey

1. Introduction and Contact Information

Dear Colleague,

As the Librarian for Online and Extended Education I am chairing a committee that is conducting a needs assessment for ASU Libraries. We hope to discover how online instructors are using the library and to uncover barriers for instructors and students in incorporating and using the library in online instruction. I am inviting your participation, which will involve completing an online survey. The survey will take a few minutes to complete.

You have been contacted to take this survey because you have taught at least one online course for ASU during the last year. Your participation in this study is voluntary. You can skip questions if you wish. You may choose not to participate or to withdraw from the study at any time. You must be 18 or older to participate in the study.

Your responses to the survey will be used to assess awareness and use of library resources and services and to uncover barriers to use. There are no foreseeable risks or discomforts to your participation.

Your responses will be anonymous. The results of this study may be used in reports, presentations, or publications but your name will not be known.

If you have any questions concerning the research study, please contact Leslee Shell at Ishell@asu or by phone at 602-543-8566. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Completion of the survey will be considered your consent to participate.

Sincerely,

Leslee Shell, MLS
Librarian for Online and Extended Education

2. Instruction in 100% Online Programs I

1. Do you teach in a 100% online degree program?
   - [ ] Yes
   - [ ] No

3. Instruction in 100% Online Programs II
Online Instructors Survey

1. Please specify the 100% online degree program(s) in which you teach.

- BAS in Internet and Web Development Concentration
- BS in Technical Communication
- ME (Modeling and Simulation)
- BAS in Operations Management Technology
- MAS Degree in Geographic Education
- ME (Quality and Reliability Engineering)
- BA in Film and Media Studies
- MAS in American Media and Popular Culture
- ME (Systems Engineering)
- BA in Political Sciences
- MA in Criminal Justice
- MS Engineering in Material Science and Engineering - Semiconductor Processing and Packaging
- BIS
- MA in Curriculum and Instruction - (ESL) or (BLE)
- MS Engineering in Materials Science and Engineering
- BIS in Organizational Studies
- MBA
- Master of Science in Clinical Research Management
- BLS
- MS of Business Administration Engineering - Electrical Engineering
- MS in Construction
- BS in Family and Human Development
- MS of Business Administration - Industrial Engineering
- MS in Industrial Engineering
- BS in Science in Justice Studies
- ME in Curriculum and Instruction - Concentration in Early Childhood Education
- MS in Technology in Environmental Technology Management
- BS in Nursing (RN to BSN)
- ME in Special Education Consultation and Collaboration: Autism Emphasis
- MS in Technology in Graphic Information Technology
- BS in Science in Sociology
- ME (Embedded Systems)

Other (please specify)

4. Other Online Instruction I

1. Do you teach online or hybrid courses in degree programs that are NOT 100% online?

- Yes
- No

5. Other Online Instruction II
Online Instructors Survey

1. Please indicate other types of online courses you teach.
   - Hybrid course(s) in a face-to-face degree program
   - Hybrid course(s) in a hybrid degree program
   - Online course(s) in a face-to-face degree program
   - Online course(s) in a hybrid academic program
   [Other (please specify): ]

6. Library Services

1. As you prepared for the first time and/or revised your online course, how beneficial were the following . . .

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<th>Not Beneficial</th>
<th>Haven't Used</th>
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<td>Materials ordered from another ASU Library</td>
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<td>Materials ordered from outside ASU Libraries</td>
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<td>Electronic Books</td>
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<td>Linking to e-journal articles in library databases</td>
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<td>Subject and Course Guides (LibGuides)</td>
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<tr>
<td>Streaming Video (e.g., FMG, Alexander Street)</td>
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Comments:
## 2. In completing the assignments in your online course(s), which library services would be most helpful to your STUDENTS?

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<thead>
<tr>
<th>Service</th>
<th>Most Helpful</th>
<th>Helpful</th>
<th>Somewhat Helpful</th>
<th>Least Helpful</th>
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<td>Librarian/Research Assistance (phone, email or chat)</td>
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</tbody>
</table>

Comments:

[Blank space for comments]

## 7. Barriers to Using Library Services

Help us understand the problems that online instructors and students encounter when trying to use Library Services for online courses.

1. Describe any barriers you have experienced with regard to integrating Library resources into your online course(s)?

[Blank space for response]

2. Describe any barriers your students have experienced while trying to use Library resources to complete assignments in your online course(s)?

[Blank space for response]

## 8. Improvements or Changes to Library Services
Online Instructors Survey

Help us learn how we could improve services for you and your students.

1. If made available, how likely would you be to use a Library Resources Tab in your online course management system (e.g. Blackboard)?

<table>
<thead>
<tr>
<th>Library Resources Tab</th>
<th>Very Likely</th>
<th>Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
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</table>

Comments:

2. Please list any recommendations you have for how library services could be improved to serve your needs as an online instructor.

3. Please list any recommendations you have for how library services could be improved to serve your online students.

9. Thank You!

We appreciate your participation in this survey. We will use your responses to help us define services that support online programs at ASU.

Leslee Shell, Chair
ASU Libraries - Task Force for Online and Extended Education
When Life Hands You Lemons: Overcoming Obstacles to Expand Services in an Embedded Librarian Program

Beth E. Tumbleson
John J. Burke
Miami University Middletown

Abstract
Having launched a pilot program of embedding librarians in faculty Blackboard courses, a team of university regional campus librarians reviewed their library services to faculty teaching online, off-campus, and traditional courses, and returned for Round Two. Just as the library services offered in this collaborative effort were taking off, conditions worsened. A storm of staff reductions, budget cuts, and administrative reorganization hit. Despite the climate of uncertainty and challenges, the embedded librarians persevered as they are convinced of the value of collaborating with faculty in Blackboard as active, academic research consultants to further students’ information literacy skills. Project Information Literacy’s findings validate this strategic solution. Consequently, the embedded librarians assessed users and implemented sustaining practices to the program to maximize its impact. Moving in the right direction is essential and doable, no matter the difficulties.

Introduction
Nurturing a new Blackboard embedded librarian program is precarious in the best of times, which this is not. Still, dedicated and resourceful librarians do not easily yield to mounting pressures. Commitment to information literacy priorities and new ways of delivering library services to students through course management systems continues to make sense. Providing academic resources to students working on course-related assignments within their online learning space enables the embedded librarian to work efficiently by customizing materials and tools available from the university library system and making them available immediately to all registered students. Whether the student is enrolled in a traditional, off-campus, hybrid, or online course, students are directed to the best library databases, electronic collections, and titles as well as given instruction in developing research strategies. In this mode of partnering online, no one worries about commuting to campus or adjusting complicated, personal schedules to library hours. The virtual library is ever open and the virtual, embedded librarian in. Consequently the librarians of the Gardner-Harvey Library, a regional campus of Miami University Middletown, Ohio did not walk away from the spring 2009 piloted program when assaulted by unexpected challenges in fall 2009. Instead, the embedded librarians assessed users and implemented sustaining practices to be described in the following pages.

Beginnings
In fall 2008, librarians at one regional campus library of Miami University reached the conclusion that a Blackboard embedded librarian pilot program was needed to address changing campus conditions. A state-assisted, open access, commuter campus depends upon remote access, especially where a sizeable portion of the library collection relies upon electronic resources available through OhioLINK, the statewide academic library consortium. The Miami Middletown campus was moving in the direction of doubling its web-based courses, focusing on a new four year degree called the bachelor of integrative studies, launching an online registered nurse bachelor’s completion program, and expanding from two to three regional locations. These opportunities called for a retooling of the delivery of library services. Attending the 2008 Off-Campus Library Services conference provided the impetus to develop a Blackboard embedded librarian program at Miami Middletown. Accordingly, groundwork for a pilot program was laid and then marketed to faculty. In Spring Semester 2009 the Blackboard embedded librarian program launched.
The pilot was successful in that 10 faculty teaching 19 sections of 13 different courses, reaching 272 students participated. Three embedded librarians actively launched the program through marketing via e-mailed invitations and the library newsletter, surveying faculty needs, creating customized content in Blackboard, and providing information literacy instruction online. Captivate screencasts, electronic resources, guidance in navigating the more challenging aspects of research were provided on the embedded librarian page, in online class modules, within discussion board threads, and through timely announcements e-mailed to all users.

Embedded librarians realized that research action no longer swirls around the reference desk nor the library Website, but in students’ online learning space otherwise known as course management systems. According to Steven Bell, “Put simply, the library portal as we know it today is unsustainable. It, along with a host of other indicators such as declines in reference questions and shifts from print to e-resources, signals that for academic libraries a ‘let’s just keep doing business as usual’ mentality is a sure path to obsolescence.” (Bell, 2009, para. 21). The Miami Middletown embedded librarians also became convinced of the truths outlined in the Project Information Literacy Progress Report, February 4, 2008 that undergraduates are frustrated by course-related research and unfamiliar with the complex university library landscape. College students seem to desire a “just in time” research approach to the one thing they need now and appreciate an available librarian-guide. Thus the embedded librarian, familiar with the faculty’s research assignment, technology, and the relevant library resources and who is available within a student’s Blackboard course, is an ideal solution.

From the student’s point of view, access to information is instant, easy, and relevant. No more wandering aimlessly on the Internet or even around the library Website. From the embedded librarian’s perspective the solution is a proactive approach to information literacy. It maximizes impact, minimizes costs, and is versatile. Upper and lower division courses, all disciplines, and any course format, whether traditional, online, or hybrid, can benefit. Therefore, more work was done during the summer of 2009. Embedded librarians assessed the program on the basis of faculty and student survey results. Online, interactive subject research guides or LibGuides were created. Further invitations were sent to faculty to elicit collaboration. A second semester of Blackboard embedded librarianship was embarked upon in Fall Semester 2009. The number of participants held nearly steady. Specifically, 11 faculty teaching 19 sections of 11 different courses, reaching 265 students participated in the Fall Semester 2009 Blackboard embedded librarian program.

**Triple Threat**

As this encouraging collaborative effort unfolded for a second round, disquieting forces began to manifest themselves. The dark clouds of staffing layoffs, budget cuts, and administrative reorganization appeared on the horizon. Summer storms are typical of the Ohio River Valley, yet these economic winds were unusually fierce. The challenges appeared as a triple threat to the fledgling Blackboard embedded librarian program.

Library staffing is a critical component to successful delivery of library services and expansion of programs like the Blackboard embedded librarian. Given a solid start-up, participating faculty spread the news among colleagues that student research skills can be enhanced in the Blackboard environment through partnering with an embedded librarian. As more faculty members agree to embed a librarian in their Blackboard courses, more demands on the librarian’s part are made. Time must be dedicated to supporting the online information literacy venture. Developing successful faculty-librarian partnerships also takes time. Creating custom research links and core research tools appropriate to the course assignment takes time.

Unfortunately in 2008-2009 Miami University’s staff was reduced as administrators responded to the national recession and Ohio’s budget cuts. Incentives to retire from Miami University were offered for the first time in the history of the two hundred year old university. In addition, staff members were laid off to reduce university expenses. In June 2009, the Gardner-Harvey Library lost a half time classified staff position and those duties had to be reassigned. These are hard blows to absorb by a small library staff that is responsible to open and operate in the same way that larger college libraries do. Finally the Miami
Middletown library staff suffered a severe blow when the public services librarian resigned for personal reasons just as Fall Semester 2009 got underway. Because a hiring freeze was in effect, the librarian position could not be filled as hoped. This loss dramatically affected the Blackboard embedded librarian program, running for the second time with nearly the same numbers of participants but with fewer embedded librarians. Where three embedded librarians had carried five courses each during the pilot, now two embedded librarians would carry ten courses apiece in the second semester.

Far-reaching budget cuts were the second difficulty the library staff faced. To address its shortfall, the state of Ohio cut its budget, which funds in part the statewide public university system. Miami University President Hodge announced the needs to reduce the university core budget by 7% during the recession and by $10 million dollars to create a sustainable budget over two years. The Gardner-Harvey Library, moreover, is facing potential budget cuts in 2010. Finally OhioLINK, the statewide resource sharing consortium upon which Ohio academic libraries rely, was trimming its budget. This affected collections, specifically subscriptions to databases. Such a large scale decline in funding impedes a library’s ability to provide the same level of resources and services as in prior years. Library collection development and services would have to be reexamined with an eye to working more cost effectively.

Third, Miami University Middletown is undergoing extensive administrative reorganization. This restructuring will affect the Middletown campus, the Miami Regional System, a newly redefined administrative unit, and relations between regional campuses and the main campus. Understandably a new hierarchy creates a climate of uncertainty. Who will orchestrate far-reaching change in the coming years? When leadership is in flux, so are the academic degrees, curriculum, online education, and essential advocacy of regional campuses. In 2008-2009, a university committee was formed to study and make recommendations regarding a Regional Campus System. The Board approved a national search for a new position, Dean of the Regional Campuses & Vice Provost. The position will be filled in July 2009. This position will eliminate two regional campus deans, the norm for the past forty years. Currently, an interim dean is providing leadership of Miami Middletown as the former dean resigned in July 2009. Further consolidations of administrative positions are expected as the Regional System is constituted. Beyond Miami University, more change is being initiated by the state government of Ohio. The University System of Ohio is reshaping higher education to provide greater access to training and higher education needed by residents to compete in a global marketplace. In such uncertain times, it is difficult to know what to expect. Nevertheless, Blackboard embedded librarianship seems to deliver what faculty and undergraduates need in terms of immediacy of electronic library resources and services. Accordingly, the two embedded librarians push onward, providing 360 degree leadership, from above, from below, and alongside. Too much is at stake to wait for administrators’ directives.

Project Information Literacy and Embedded Librarians

It would be helpful to pause and reflect upon current research findings to determine what light may be shed upon Blackboard embedded librarianship. Data from Head and Eisenberg’s Project Information Literacy Progress Report December 1, 2009, Lessons Learned: How College Students Seek Information in the Digital Age, would seem to imply that embedded librarianship is a fruitful and strategic direction to pursue. Insight into the ways college students undertake course-related research can be gleaned from the forty two page report which bluntly admits “Librarians were tremendously underutilized by students. Eight out of 10 of the respondents reported rarely, if ever, turning to librarians for help with course-related research assignments.” (Head & Eisenberg, December 1, 2009, p. 3). Students do not turn to librarians, but to their instructors when they are in need of a research coach. “Instead, instructors played an important role in coaching students through the research process—from figuring out a research strategy to finding acceptable resources to writing up their findings.” (Head & Eisenberg, December 1, 2009, p. 32). A final recommendation made is that librarians “take an active role and initiate the dialogue with faculty to close a divide that may be growing between them and faculty and between them and students—each campus is likely to be different.” (Head & Eisenberg, December 1, 2009, pp. 34-35). It appears, then, that the faculty-librarian collaboration through a Blackboard embedded librarian program addresses this identified gap. Both parties dialogue and contribute to designing meaningful research assignments and developing student research skills.
One reassuring insight drawn from this report is that students do utilize libraries. They specifically turn to “online, scholarly research databases (such as those provided by EBSCO, JSTOR, or ProQuest) for conducting course-related research...” (Head & Eisenberg, December 1, 2009, p. 3) at 84% frequency as well as to the online public access catalog at 78% in contrast to the “Ask a Librarian” (chat, email, or IM for reference at 12%. (Head & Eisenberg, December 1, 2009, p. 22). In other words, although students bypass librarians, they do go directly to library resources. Nevertheless, Head and Eisenberg note that librarians introduce students to these very tools in freshmen orientations. In addition they confirm that undergraduates often need help with “Big picture context” and “Information-gathering context” at the beginning (Head & Eisenberg, December 1, 2009, pp. 12-13) which is another service librarians provide. Specific tasks students struggle with include: “narrowing down topics, finding relevant resources, sorting through too many results from online searches, and evaluating the credibility of what students choose to use.” (Head & Eisenberg, December 1, 2009, p. 32).

Obviously, then, students would benefit from more interaction with librarians who are trained in these information literacy skills. Librarians, however, emphasize thoroughness in their approach “while the student approach is based on efficiency.” (Head & Eisenberg, December 1, 2009, p. 20). “When it comes to finding information and conducting research, today’s students clearly favor brevity, consensus, and currency in the information sources they seek.” (Head & Eisenberg, December 1, 2009, p. 33). Once again, the Blackboard embedded librarian is able to deliver what is wanted. Customized content and links to relevant resources can be provided in the course management system so that students have 24/7 access to needed resources and point-of-need instruction without the frustration of sorting through all library resources located on the library Website. It is heartening to realize the latest research on information literacy validates the worth of Blackboard embedded librarianship on essential levels.

Results from Fall 2009

Despite the difficulties explored in detail above, the embedded librarian effort in Fall 2009 was largely a success. The volume of students and class sections remained steady, with five faculty members returning as participants and six first-timers. The librarians met with each class (except for the web courses) to briefly introduce the embedded program, and conducted hour-long instructional sessions with several of them. This had been done in a small number of the spring classes, and was intended to make students more aware of the embedded librarian.

A two-part method, incorporating both formal and informal measures, was used to assess the program. The same approach was used in Spring 2009. First, the librarians conducted a web-based survey of faculty members who participated in the program and then a separate web-based survey of students in the embedded classes. Both surveys were created using Prezza Checkbox. Second, the librarians discussed their experiences working corporately with the classes and interacting individually with students. The results from the surveys are presented below, while the results of the informal discussions are represented in the following sections.

The faculty survey consisted of 16 questions, all but one of which are affirmative statements with a five point Likert scale rating the respondent’s agreement with the statement. The exception was a final open-answer question asking respondents to suggest improvements to the embedded program. See Appendix A for the full list of questions on the survey. Six of the 11 participating faculty members responded, for a 54.5% response rate.

Faculty members were largely satisfied with the embedded librarian experience. 100% responded either “agree” or “strongly agree” to statements on their favorable impression of the collaboration, their interest in repeating the experience in the future, and their willingness to recommend embedded librarians to colleagues. Two-thirds of faculty members either disagreed or strongly disagreed with the statement that there had been no improvements in student’s research behavior due to their participation in the embedded librarian program. Particular strengths of the program (statements which 83% of respondents either agreed or strongly agreed with) included introducing new library resources to students, reinforcing instructors’ expectations for research to students, impacting the design of research assignments, increasing students’
understanding of how to access course-specific library resources online, and impacting students’ adoption of more sophisticated search strategies.

The survey identified three areas for growth and improvement. Only 20% of faculty responded that students were better able to evaluate web sites. While this skill was directly addressed in only a small number of the embedded classes, the librarians hoped that general guidance on evaluating information sources would help students choose better sources. More direct guidance will be needed in the future. 33% of faculty agreed or strongly agreed that the embedded librarian provided timely alerts to technology developments and difficulties. This could be interpreted hopefully to mean that there were few technological breakdowns or changes with library resources that required notification. However, it does suggest that embedded librarians should more regularly update embedded classes about technology breakdowns or alterations in interfaces (there were at least two major episodes in this category in the semester). Likewise, only 33% of faculty members responded that students more accurately cited sources in their bibliographies. Resources in the form of online handouts and links to bibliographic management software (RefWorks) were available in embedded classrooms. Future classes should be more strongly prompted to consult these resources at appropriate times during the semester.

The student survey consisted of 11 questions. All but three of the questions provided affirmative statements with a five point Likert scale rating the respondent’s agreement with the statement. Two questions asked students to rank multiple options for the placement of embedded library resources within the course and methods they would most likely use to contact an embedded librarian. A final open-answer question asked them to offer additional suggestions on how the embedded librarian could have assisted them with their assignments. See Appendix B for a full list of the questions on the survey. The response rate for the survey was rather low (5.7%), with 15 of 265 students responding.

Students, like faculty, had a generally positive view of the embedded librarian, but some aspects of the experience still need improvement. 67% agreed or strongly agreed that it was helpful to have an embedded librarian in the course. 73% would like to have an embedded librarian in future classes that they take. 87% did take the time to view the embedded librarian page in their Blackboard classroom, and 73% used new databases or websites in their research. On the other hand, only 27% of students attempted to contact the embedded librarian for their course, and 47% of all students were satisfied with the research assistance they received from the librarian. 47% responded that the librarian-suggested resources and strategies made their research easier and less-frustrating. A number of the open-answer comments on the final question suggested that students may not have discovered or used the embedded library resources until later in the semester, which might account for some of the lower ratings of the positive effect of the embedded program. The librarians should also reevaluate the resources they shared and the interactions they had with students to see how these can be improved.

One helpful element of the survey was the guidance it gave on two questions relating to placement of library resources within the course management system and the methods of contact that students preferred. 67% of students preferred to see library-related materials (links to databases, tutorials, handouts, etc.) linked next to assignments in the course’s online classroom (the better for students to find the resources when working on the assignments). Most of the embedded resources (both in Fall 2009 and the previous Spring) have been posted in a separate embedded librarian folder, partly due to decisions made in the initial development of the program and partly due to faculty members’ wishes. This result strengthened the findings from the prior semester’s survey, which found that 71% of the students agreed with that placement. Similarly, the question on the survey that addressed student preferences of communication methods to contact the embedded librarian showed consistent results with the Spring survey. Email was the preferred choice by 73% of students in fall and 80% of students in Spring. Embedded librarians offer students a wide variety of ways to make contact, even adding texting and in-person research consultations to the Fall survey. Email remains the outstanding first choice for Middletown students.

It was interesting to compare other questions from the Fall 2009 student survey with those from Spring 2009 to see if other trends were beginning to develop. Both surveys featured response rates close to 6% (6.3% in the Spring) despite enhanced efforts in the Fall to send reminders and to start the evaluation period ahead of final exams. While the majority of results showed small increases in agreement from
Spring to Fall, there was one larger increase and two notable decreases. Students were twice as likely to have contacted the embedded librarian in the Fall as in the Spring (27% to 12%). That appeared to be borne out by the embedded librarians’ personal reflections on contact from embedded course students. Students in the Fall, however, were less satisfied with the help they received from librarians (47% to 63%) and fewer agreed that the librarian-suggested resources and strategies made their research easier and less-frustrating (47% to 65%). These results should not be taken as definitive or even necessarily representative of the entire group of embedded students, given the response rate. They are troubling enough, though, to cause the embedded librarians to investigate further as to what students expect in terms of help as well as identifying what might be done to simplify usage of library resources. That being acknowledged, it remains clear from Project Information Literacy that students prefer a streamlined, familiar research methods which may not serve them well as they pursue more advanced studies. Research by definition is a process of trial, error, and discovery.

**Sustaining Practices**

After experiencing the reduction in resources between Spring and Fall Semesters in 2009, and now looking ahead to developments in 2010, the embedded librarians developed a list of practices they utilized to sustain the embedded program. These may not be truly “best practices” given that some have only been achieved in part at Middletown, and all deserve further exploration and refinement. They do, however, identify activities and collaborations that can help any embedded librarian effort grow and succeed.

- Assessing the embedded experience is crucial to its growth and development. Regularly surveying students and faculty members on their experience in embedded librarian courses provides helpful guidance to reshape the embedded program. Lessons learned from the past two semesters’ surveys motivated the embedded librarians to experiment with the placement of embedded materials in the online classrooms and to find better ways or more appropriate times to teach topic narrowing and source evaluation. The librarians plan further survey development to compare faculty and student perceptions in both embedded classes and classes in which librarians only conduct a single face-to-face instruction session.

- The development of distance learning courses and programs creates opportunities for embedded librarians. At Middletown, the creation of library Captivate tutorials was motivated by a request from a faculty learning community aimed at converting a bachelor completion nursing program to Web delivery. Those tutorials provided some key initial content for the embedded librarians to use not only for the online nursing courses but also for traditional English and computer science courses in the pilot semester of the embedded program. Harnessing the opportunity to extend library services to a particular distance course or full program can build talents and methods of application that can impact embedded assistance for all types of classes. The current effort on campus to offer a business technology degree online provides Middletown librarians not only new courses in which to embed services, but also the opportunity to create new content and approaches.

- Collaboration with other libraries and librarians expands the instructional content available to embedded librarians. The diversity of existing resources and examples for off-campus library services and embedded librarians offers wonderful models for any embedded librarian program. This is true both at the starting point of the program and also as it continues to grow and be modified – perhaps even more importantly in this latter period. Particularly in a small library such as Miami Middletown, joining with others in group efforts or utilizing shared materials is a huge boon. Middletown librarians are fortunate to be part of a larger university library system, and collaborated with main campus librarians to develop LibGuides that provided online research guides organized by subject. The guides are a shared effort that provide much useful content to embedded classes at Middletown and only required a relatively small investment of time on the local end. Likewise, the embedded librarians have used shared library tutorials from the Animated Tutorial Sharing Project (n.d.) to teach students various information literacy concepts and database searching.
• Collaboration with other campus/university units provides valuable opportunities to market the embedded program or to shape the use of technology within it. York and Vance (2009) correctly caution embedded librarians to not go it alone when pursuing embedded operations. This extends beyond seeking other librarians to help with embedded course interaction to pursuing other groups and individuals on campus for support. In addition to the distance learning development opportunities mentioned above, the Middletown librarians found others on campus who could impact the embedded program. The Middletown campus Center for Teaching and Learning awarded two of the embedded librarians a grant to offer an online information literacy forum for faculty (a number of whom became involved in the embedded program) and then later hosted a lunchtime discussion/presentation by the embedded librarians about the program as the pilot concluded. This support greatly helped the marketing effort. Support of a more technical nature was provided by our campus educational technology coordinator who guided and provided troubleshooting on the embedded librarians’ Captivate tutorial creation. The director of the Center of Online Learning has constantly funneled new suggestions of educational technologies of possible use in the embedded program. Reaching beyond the library community has helped to create a network of professionals who extend the horizons of the embedded effort.

• Offering new library services (other than embedded librarians) to faculty who are involved in distance learning or technology-assisted courses can pay great dividends in future embedded classes. As the Middletown library has started supporting more distance learning courses, staff members have begun offering services to distance learning and other faculty members that are new to the library. Electronic reserves of scanned articles, book chapters, and even audio recordings have been in place at Miami for several years, with much of the scanning work done at the main campus. Middletown library staff began scanning materials on site for e-reserves in the last two years and then have extended the service to scanning items requested by faculty to place in their own Blackboard classrooms (rather than through the library e-reserve system). A new development has been the introduction of the video on demand service, which involves digitally encoding library-owned DVDs and videocassettes for use in Blackboard courses. Performing the encoding at Middletown has built relationships between the library and a diverse group of faculty, some of whom will have embedded librarian courses in Spring 2010. The more support the library provides to distance learning, hybrid, or course management system-supported classes, the more opportunities there are to convince faculty to participate in embedded information literacy efforts.

• Persistence in marketing library reference services to students in embedded classes pays off eventually. Though the percentage of students in embedded courses who contacted a librarian with questions has been relatively small, they have comprised a noticeable group. Instant messaging and email reference questions, a relatively rare event before the embedded program, are a much more regular occurrence. Since the embedded librarians also give their personal email addresses and IM screen names to students in the embedded courses, it has been easy to note increased traffic. Interestingly, though, operating in a web-based environment does not lead to only electronic communications with students. Students in embedded courses, presented with options to text or IM or email their embedded librarian, often just drop by in person for reference help or schedule research consultations. Librarians must remain open to various means of communication and interaction.

• Collaboration with faculty members helps the embedded librarian build a relationship and focus on the faculty member’s (and their students’) real needs for information literacy. It has been interesting and educational for the librarians to watch courses operate from the inside (at least as far as Blackboard content will allow this to happen) and not just through an assignment or syllabus here or there – or often having to interpret a faculty member’s intent in an assignment through the eyes of a student. Gaspar and Wetzel (2009), in their study of librarian-faculty collaboration in writing courses, discuss “the need for closer collaboration early in the development of the course syllabus to tie in the library portion of these courses more closely with the topics and assignments created by the teacher.” (p.583). The embedded librarian collaboration starts with a course survey (see Appendix C) in which the faculty member identifies which assignments have a library research component and what information literacy concepts would be crucial for students to learn
in the course. The librarian and faculty member then discuss the survey and make plans for plugging content into the Blackboard classroom, holding face-to-face instruction sessions, and creating a timeline for the librarian to concentrate on interacting with students. The plan is not set in stone, though, and does allow for spontaneous interventions by the librarian as needs present themselves through student interactions with librarians or by faculty members reacting to student work. The authors are beginning to experience times where librarians directly impact assignment design and where discussions with faculty members go beyond standard library instruction territory. Ultimately, this deeper collaboration can only work to the advantage of students and be a better fit of information literacy education to course goals and activities.

- Make a commitment to embedded librarianship and change library processes and practices to support it. The embedded librarians at Middletown have been driven by the validation of the Project Information Literacy results and the other sources discussed above to see the embedded program as essential to the campus, its students, and to the future of the library. Continuing and expanding the program, especially in current budget conditions, has meant a realignment of staff activities. Cataloging, processing, and acquisitions were outsourced to the main campus just prior to the start of the embedded program. Though periodicals, financial services, and various collection management activities remain in place locally, all staff have a public services focus and work regular hours at our combined circulation/reference desk. This has been a major transition for our remaining library support staff who had to focus on new tasks as our overall staff numbers decreased. When the public services librarian resigned, despite the general hiring freeze the library was able, after a short delay, to hire a temporary full-time staff member to take on interlibrary loan and video on demand encoding to allow the librarians more time to work with embedded classes. The interim dean, citing the involvement of librarians with embedded classes, is extremely supportive of launching the public services librarian search in the next fiscal year. Challenges remain, but if the library can continue to identify and cease activities and services that no longer advance its interactions with students, staff can do a much better job of helping students meet their information needs.

**An Embedded Future**

By implementing the sustaining practices above, embedded librarians at Miami University Middletown are committed to developing the Blackboard embedded librarian program in the foreseeable future. The response to the latest marketing efforts has been strong. It appears that 14 faculty members will take part in the embedded program during Spring 2010. Two embedded librarians will partner with instructors teaching 24 sections of 14 different classes available as online and on-campus offerings, of upper and lower division classes spanning the disciplines. Five of the instructors are new additions to this faculty-librarian collaboration. Sizeable challenges still lay ahead for the embedded librarians who continue to retool library resources and re-imagine information literacy strategies while confronting increased workload factors. The essential priority, however, of providing information literacy instruction to students and faculty alike, remains a guiding force no matter current conditions. For the present embedded librarians must look to actual and potential support wherever available through the university and the larger library profession. Blackboard embedded librarianship has become an integral mode of delivering library resources and services to university stakeholders.
References


Appendix A

Faculty Embedded Librarian Survey Questions, Fall 2009

1. The Blackboard embedded librarian introduced students to new library resources for research.
2. The Blackboard embedded librarian reinforced my expectations for student research to my students.
3. The Blackboard embedded librarian provided a refresher of various points of the research process.
4. The participation of the Blackboard embedded librarian in my course impacted the design of my research assignments.
5. The Blackboard embedded librarian provided timely alerts to technology developments and difficulties.
6. Due to my participation in the Blackboard embedded librarian program, my students chose topics that were more narrowed and manageable.
7. Due to my participation in the Blackboard embedded librarian program, my students better understood how to access course-specific electronic resources available through the library.
8. Due to my participation in the Blackboard embedded librarian program, my students used more scholarly sources in their research projects.
9. Due to my participation in the Blackboard embedded librarian program, my students appeared to adopt more sophisticated search strategies.
10. Due to my participation in the Blackboard embedded librarian program, my students more accurately cited sources in their bibliographies.
11. Due to my participation in the Blackboard embedded librarian program, my students were better able to evaluate web sites.
12. I did not detect any improvements in typical research behavior this semester compared to previous semesters, due to my participation in the Blackboard embedded librarian program.
13. I had a favorable impression of the Blackboard Embedded Librarian collaboration this semester.
15. I would recommend the Blackboard embedded librarian program to a colleague.
16. What could be done to improve the embedded librarian program?
Appendix B
Student Embedded Librarian Survey Questions, Fall 2009

1. Did you click on and view the Blackboard embedded librarian page in your course?

2. Did you use any new databases or websites provided by the embedded librarian when researching your papers or projects this semester?

3. Where you like to see research help (links to databases, "how to cite articles" information, suggestions of search terms, etc.) added in a Blackboard classroom for your course? Rank the following choices in the order that you would use them, with 1 being the most likely choice and 4 being the least likely choice.
   - Next to an instructor-posted assignment
   - On a separate embedded librarian page in the classroom
   - On the Blackboard Discussion Board
   - Emailed directly to you

4. Do you have any other suggestions for where you would like to see research help?

5. Did you attempt to contact the Blackboard embedded librarian during the semester?

6. What communication methods would you use to contact a librarian? Rank the following choices in the order that you would use them, with 1 being the most likely choice and 7 being the least likely choice.
   - Email
   - Blackboard Discussion Board
   - Telephone
   - IM
   - Meet in person
   - Text
   - Research consultation

7. I am satisfied with the research assistance I received from the embedded librarian.

8. It was helpful to have a Blackboard embedded librarian in this course.

9. I would like to have a Blackboard embedded librarian in classes I take in the future.

10. The librarian-suggested resources and research strategies provided in my Blackboard course made my research easier and less-frustrating.

11. What else could the embedded librarian have done to help you with your assignments this semester?
Appendix C

Blackboard Embedded Librarian Survey of Faculty Needs

Name:
Course(s):
Contact Information:
e-mail:
telephone:
Best time to meet and discuss details specific to your courses:

1. Would you prefer the embedded librarian to work with you
   A. Only at Start-up of the Semester?
   B. Only for the Research Component of the Course?
   C. Throughout the Semester?

2. Briefly describe the research required of your students? Attach the assignment, if possible.
   Are there regular assignments requiring research or a major research paper/project or a general desire to
   strengthen information literacy skills in students as a course outcome? Please describe your goals.

3. What information literacy skills would you like your students to understand better and see developed in
   them? Where have your students needed research help in the past?

Which information literacy skills and library tools would you like to make available in your Blackboard
course. You will have an opportunity to discuss specifics. Often content is placed on an Embedded
Librarian page as well as next to the research assignment. Sometimes an “Ask the Librarian” thread is
placed in Discussion Board. Typically the librarian is enrolled in the course as a Course Builder or
Instructor to add content to the course. A model Blackboard classroom is available to showcase options
from which you may choose.

The Blackboard embedded librarian is able to assist you and your students with a variety of research tasks
which librarians have traditionally addressed during instruction sessions or individual research
consultations. These academic research skills include but are not limited to:

- Information Literacy Skills
  Searching the Miami University Catalog,
  Searching Library Databases
  Avoiding plagiarism
  Managing citations in RefWorks
  Narrowing a Topic
  Keywords & Search Terms
  Differentiating between Popular & Scholarly Sources
  Searching Google Scholar
  Requesting MU & OhioLINK Materials
  Evaluating and Navigating Websites
  Locating Statistics

- Research Tools To Be Placed in Blackboard
  How-To Screencasts
  Assignment Specific Recommended Resources
  LibGuides online; interactive research guides by Department or Course
  Delicious.com links
  Embedded Librarian Page
  In-class instruction, from 15 minutes to full class
Outside class, research consultations by appointment
Research Communications using:
    Announcements, emails, IM, FAQ Page, or Telephone Calls

We look forward to collaborating with you and building a virtual library experience that serves the research needs of your students this Spring Semester 2010.
Libraries have been struggling for years to move beyond one-shot library training. In spite of efforts in the last decade to promote information literacy for undergraduate and graduate students alike, libraries more often than not are still not reaching the goals articulated in the ACRL information literacy standards. The problems are compounded when institutions serve students who also happen to be taking part or all of their classes online or at field-based sites. The model for providing a library training program for students in the Doctor of Education (EdD) program in a distance program focuses on providing students with training that builds sequentially and developmentally at the points of need for students in the first year of classes and provides additional support for students once they have completed their course work. This multi-stepped approach is designed to help doctoral students throughout the doctoral process.

The Setting

Addressing the library training for NSU’s doctoral students presents significant challenges. In the fall of 2009, the Fischler School of Education and Human Services accounted for 38% or 10,363 of all students enrolled in NSU, which made the Fischler School the largest academic center in the university. The Fischler School has one of the five largest education programs in the United States and the largest in the state of Florida (MacFarland, 2009). A total of 4,212 of the education students were doctoral students enrolled in NSU’s EdD program. Of the 4,212 students, only 821 students (19%) lived in southeast Florida, and only another 16% lived in other parts of Florida. The other two thirds of the doctoral students lived elsewhere and either took all their classes online or met at field-based sites at NSU Student Education Centers in Las Vegas and the Bahamas or at various meeting locations in Virginia, New Jersey, Pennsylvania, Illinois, Georgia, Alabama, and Louisiana, just to name a few. Most challenging of all, 186 students attended classes at international sites in Jamaica, the Dominican Republic, Puerto Rico, Belize, Malaysia, South Korea, and more. The doctoral students in the EdD program were also ethnically diverse with NSU (2009) graduating the largest number of doctoral African-American and Hispanic students in the country. In 2009, a total of 2,053 students self-identified as African-American which accounted for almost 50% of the students in the program. To complicate things still further, 37% or 1,565 of the doctoral
students were finished with classes and were in the ABD (All But Dissertation) stage in the fall of 2009 (J. Reeves, personal communication, November 16, 2009).

Until the mid 1990s, academic libraries in general did not do a good job of providing library services for distance programs, and this was true at Nova Southeastern University as well. Packwood’s (1993) and Abate’s (1998) dissertations both examined academic support services for NSU’s nontraditional students. Both dissertations looked at academic services in general and library services in particular, and both concluded that library services to distance students needed to be improved. By the mid 1990s, NSU’s academic library began actively working to provide library training for students on and off campus (NSU, 1995). Since NSU was both a pioneer (Riggs, 1997) and a national leader (Packwood, 1993) in distance education, the first efforts were simply to provide instruction to field-based sites in the United States (Pival & Tuñón, 1998), internationally (Chakraborty & Tuñón, 2002; Ramdial & Tuñón, 2004; Ramirez & Tuñón, 2003), and online (Pival & Tuñón, 2001). The library also moved beyond one-shot library training (Tuñón, 1999; Chakraborty & Tuñón, 2002) for EdD students with training that built sequentially and developmentally (Tuñón, 2003b) during the first year of classes. Librarians then began to try to assess the effectiveness of library training efforts (Tuñón & Brydges, 2005; 2006; 2009).

Over the years, the Alvin Sherman Library has developed a good model for library training for the EdD students. Library training had been handled since May of 2003 in a three-hour hands-on session when students came to campus for their orientation. However, one problem with this approach was that the information did not come at the point of need; orientations were done in the months before the start of the semester. Once the library orientation was moved to an online format in 2008, the librarians were able to lobby for an opportunity to provide additional library training when students took their first required research class, during their second semester. During these sessions, the librarians helped students with advanced search strategies tailored to their topics and introduced them to additional resources including the ProQuest Dissertations and Theses database. Since about 80% of the students live outside of southeast Florida, the librarians traveled to sites where students meet, at field-based sites as far away as Belize, Malaysia, and South Korea. If the courses were online, Elluminate was used to reach those students. First-year students also attended a four-day summer conference in Orlando, where the library offered 15 to 20 training sessions on everything from locating tests and measurements to advanced sessions on APA formatting and how to use EndNote. In the evenings, librarians were also available in the computer lab for individual consultations. Additionally, students had the option at any time during the semester to schedule one-hour individual consultations with a librarian by phone or in person if they needed further assistance with unusual topics. The end result was that library training for students in their first year of classes included (1) an at-your-own-pace online orientation, (2) a formalized library training session integrated in students' first research class, and (3) a variety of workshops at the end of the first year of classes during their summer conference. This provided students with a solid foundation in library skills because the training built sequentially and developmentally throughout the course of the year.

The Problem

Although the Alvin Sherman Library provided good library training services for first-year students, the doctoral students in continuing services did not have an effective or convenient method for staying up to date with library resources and services. Some students who had stopped working on their dissertations for whatever reason got behind with new sources published in the literature, and because students were not “in the loop” so to speak, they also often did not learn about new resources and services being offered by the library.

Review of the Literature

The assumption has been that doctoral students are self-directed learners capable of being independent researchers (Green & Macauley, 2007), but the literature shows that students who do not finish their dissertations (sometimes referred to as ABD students) often have problems when working in an environment where classes, work, and expectations are no longer highly structured (Pilbeam & Denyer, 2009). Because they are working adults who are already balancing a number of other demands on their time and energy including work and family commitments, they may feel increasingly frustrated, disconnected,
and isolated (Carter, 2008; Tuñón, 1999) as they struggle through the process of designing, implementing, and writing their dissertations (Yeager, 2008). Other studies also found some of the same issues for students in nontraditional, field-based, and online programs (Packwood, 1993; Schultz, 1983). Still other dissertations have examined special challenges faced by minorities in doctoral programs (DeNeal, 2008; Wimms, 2008).

Librarians want to ensure that students have the necessary skills to undertake a systematic and structured approach to completing the literature review. Doctoral students need to have good library research skills (Morner, 1993) because the quality of the resources utilized in the literature review is impacted by the proficiency of the individual conducting that search. However, Morner (1993) concluded that EdD students at her institution were not adequately prepared. In a more recent dissertation, MacNamara (2003) suggested that doctoral students benefited from proactive institutional support, including opportunities for students to update their library research skills, and Yeager’s (2008) multiple-case-study dissertation found that doctoral students liked to be able to do their research online and rarely use physical libraries any more. That did not necessarily ensure, however, that students were searching effectively. Tuñón and Brydges’ (2009) citation analysis study of 500 EdD dissertations completed at NSU and 100 dissertations completed at Carnegie research institutions found that although NSU’s EdD students did frequently use journal articles that were scholarly and current, they were also less likely than EdD students at other institutions to use other types of scholarly resources, including dissertations, government reports, and conference papers. The data raised questions about how well doctoral students were prepared to keep up with the rapidly changing library services and resources in the 21st century, particularly once they were “outside the loop” and working in relative isolation.

**The Library’s Solution for ABD Student Training**

As previously described, the Alvin Sherman Library was able to build on the library training program for first-year students in the Doctor of Education (EdD) program. The librarians, students, and faculty were satisfied with the three-part training with the library orientation, training integrated into the first research class with individualized feedback for each student, and optional sessions at summer conference. The fact that the reference department also offered help at the reference desk in person, by phone, and online throughout the year as well as individual consultations was also useful for students wherever they were in their doctoral programs. However, students who took a number of years to complete the dissertation process were often not familiar with the new resources and library tools. A few of the 1,000 or more ABD students would find their way each summer to the summer conference to help “jump start” the dissertation process. It became increasing clear to librarians and the Fischler School’s research staff that students were often not being proactive about finding out how to use new applications such as link resolvers, RSS feeds, personal accounts in subscription databases, the procedures for setting up email alerts, or using EndNote. As with the students Sheehan (2009) had researched, NSU students who had been in the doctoral program several years were not familiar with the “huge leaps forward in [library technologies]” (p. 31). Instead, anecdotal evidence suggested that this did indeed contribute to students feeling isolated and frustrated.

To address the needs of ADB doctoral students, regional workshops started to be offered in 2008 with sessions on designing research studies, SPSS, the Institutional Review Board process, APA formatting, and library research. The two-day optional workshops were initially designed to provide ABD students who had lost momentum a variety of sessions to help “kick start” the dissertation process, but a surprising number of students still taking classes also opted to attend. The workshops were offered regionally in Las Vegas, Atlanta, and Trenton in that first year to reach Fischler’s distance students in a variety of regions of the United States. Anecdotal feedback from students in 2008 and 2009 indicated that students found this multilayered approach actually proved very beneficial. As a result, at the time of the completion of this article, plans were underway to do follow-up phone interviews with students who attended library training sessions as part of the regional workshops in 2010. The researchers plan to use a purposive sample of participants using a descriptive qualitative design based on a constructive approach. The researchers hope to gain insights into the whether the needs of ADB students differ significantly from those of students still enrolled in courses. The anticipated outcome is that students at the ABD stage do require a different level of support, but that is yet to be quantified!
Conclusion

The four-part library training approach for doctoral students provides a solid model that may be of use for other institutions offering classes at a distance. The model is also important because it demonstrates that the library and the university's academic program can collaborate effectively when library training is offered sequentially and developmentally at the points of need for students at the various stages of the doctoral process.
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Aligning Assessment to Organizational Performance in Distance Education Service Delivery

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Abstract
This article seeks to provide an understanding of the issues in and possible steps of aligning the library’s assessment processes to distance education service delivery. Through a review of the literature and current practices, the researcher sought to identify the need and value of aligned performance assessment processes for libraries, the primary contributing alignment factors affecting the library assessment process, and potential benefits of improved alignment of the assessment process for libraries in aligning assessment to the distance education services provided to customers. The results of the review suggest that libraries can improve the reporting and value of their assessment processes by improving the alignment of their assessment processes to distance education service delivery in two ways: internally through the use of consistent and innovative processes, metrics, and culture within the library and externally by embracing the alignment factors and available technologies of the library’s service environment. The library must progressively elevate the alignment of the library’s assessment processes from the traditional internal non-alignment of assessment to the total internally–externally integrated aligned assessment. The article concludes with a conceptual model of aligning library performance assessment to distance education service delivery for the effective reporting of library value and performance to stakeholders.

Introduction
Libraries and their value to stakeholders are being reshaped by the dynamic service environments in which they operate. The library’s service environment is that space, both virtual and real, where the library actively and purposefully utilizes resources to generate services and access to library and information services for its customers and stakeholders. The library’s service environment and all of its constituent components drive the operational and strategic responses generated by the library to effectively respond to stakeholder needs. The library’s strategic responses are the information services, resources, and access the library delivers to stakeholders and customers in order to meet service needs expectations, and respond to competitive challenges and service options available to the library’s customers and stakeholders for library and information services. Service innovations and transitions are a critical strategic component of the library’s service response and this is especially true for libraries serving distance learners.

In addition to these service environment factors, library stakeholders are requiring greater accountability and value creation by libraries within their service environment while working with limited resources and strategic opportunities. The library’s responses to this increased accountability has been more difficult with the use of assessment practices and reporting of internally focused, traditional measures of outputs, efficiency, and outcomes. This type of assessment information is not as sufficient as once was for library stakeholders; again this is especially true as more resources, library service delivery and customer focus is moving outside of the walls of the library and into a customer in an uncertain virtual region of the library’s service environment. The library must begin to generate, determine, and report assessment impact and value information that addresses these dynamic factors if it is to compete as a viable service provider. To help ensure the maximum success in competing for resources and strategic opportunities in this critical strategic time, libraries must have and benefit from the most effective assessment processes available. One of the most essential aspects of an effective assessment process is the alignment of the assessment process to the library’s strategic information needs and to its service environment. With the expanding scope of

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library services, aligning the library’s assessment practices to effectively include distance education service delivery is a new imperative for many libraries.

Review of Literature and Research

The literature of the library profession is saturated with discussions and research on historical and current assessment practices of libraries; performance assessment practices, and metrics; and the cultures of assessment in libraries. However, the professional literature does not frequently reference the term “alignment” in regards to assessment processes directly. Searches of the terms “alignment” (and the derivative forms “align” and “aligned”) in any combination with any of the terms “assessment, evaluation, measurement, metrics, performance, and value” in the Library Literature and Information Science database and in the Library and Information Science Technical Abstracts database resulted in zero findings. A similar search strategy in the Library and Information Science Abstracts database resulted in one record from 2004. In this article, Barton (2004) briefly discussed the need for the alignment of library objectives with institutional goals for digital libraries.

The literature of assessment outside of librarianship does frequently reference the concept of alignment in the assessment process. Two of the most noted references to alignment in organizations and assessment are the works by Labovitz and Rosansky (1997) and Kaplan and Norton (2006). Labovitz and Rosansky introduce the concepts and benefits of alignment throughout the organization. Alignment is used to link the organization (i.e., the library) with its organizational strategy and then with customers and process improvements (including their assessment). “Leadership and culture become the key drivers that enable an organization to adjust rapidly to its environment.” They (i.e., leadership and culture) also ensure that everyone, including internal and external stakeholders, understands the “main thing” of the business. It continues by emphasizing that “alignment is not about the management of quality” but instead, “It is about the quality of management” (Labovitz & Rosansky, 1997, p. 13). To be effectively aligned, organizations need vertical alignment (Strategy to People) and horizontal alignment (Process to Customers). Kaplan and Norton (2006) discuss the importance of alignment in the Balanced Score Card (BSC) model of organizational accountability and planning. The third principle of the BSC model requires that all organizational units, including their efforts, productivity, and resources, be aligned to the organizational strategies and environment. Alignment creates enterprise-derived value, which are the values and reduced costs of having redundant systems processes and organizational efforts.

These results would seem to indicate that while industries outside of libraries have began to focus and benefit from alignment in assessment; there has not been a lot of focus on the concept of alignment of assessment processes in libraries to date. While the term “alignment” is not frequently referenced in the library professional literature itself, the literature has many references to the symptoms typically associated with an unaligned assessment process in the library. Typically, unaligned assessment processes do not use assessment methodologies or metrics consistently, are not connected to a culture of assessment, do not involve all stakeholders from within or outside of the library, are not connected to the service environment, are not innovated adapted, or evaluated, and are not valued in process or results by the library or its stakeholders in the service environment. The causes or symptoms of aligned assessment processes can generally be broken down into three general types of symptoms: lack of consensus, methodological / implementation, and organizational.

The lack of consensus regarding cause/symptom is readily illustrated by Orr (1973) who wrote that the existing assessment processes to measure “library goodness” (i.e., the value and quality of the library’s service) was the ultimate criterion in assessing library service. However, there was, and still is, no consensual definition of “library goodness” to assess. Lancaster (1977) identified the lack of consensus in the profession about what assessment processes and standards used in assessing the library as a major contributing factor to the unsuccessful use of assessment by libraries. This is still applicable today, as libraries are struggling to determine the best assessment processes and metrics. White (2002) found that many head administrators of Florida public libraries did not know which type of assessment information to report to stakeholders or reporting too many different types of assessment information to library stakeholders as there was no determination of what information was needed or most effective.
The methodological / implementation symptom is described by Childers and Van House (1993) who stated accurately:

The development of the output measures was done without an empirical base; there was no systematically laid foundation for choosing which output measures to adopt. Nor is there a systematically laid foundation for selecting output measures over other kinds of measures to describe library effectiveness (p. 44).

Lawes (1993) stated that “many libraries have been measuring so many output measures for so long in so many different ways that staff frequently suffer from a ‘mental paralysis’” (p. 142). Lawes also theorized that due to long term exposure to the multiple measurement process, poor understanding of procedures and interpretation, and an inability to see value, staff lose interest in assessment; thus, errors are introduced into the data collection or the results are not implemented, as they should be due to the resulting apathy and confusion. This further reduced the value of assessment and the reporting of assessment results in such situations. Moorman (1997) found a lack of consensus in the types and uniformity of public library assessment processes and reporting standards of assessment results. Moorman was unable to find consensus in either the values of the output measures reported or the methods deployed by libraries to obtain these assessment measures.

The service environment is challenging not only how library assess and report value but how the organization is structured to perform the strategic responses necessary and its perceptions of assessment. The largest impact factor of organizational change for academic campuses across the world has been the wide scale implementation of distance education delivery. In 2006, the Sloan Consortium reported that more than 96% of the largest colleges and universities in the United States offered online courses and that almost 3.2 million students in the United States were taking at least one online course during the Fall 2005 term (Sloan, 2006). The National Center for Educational Statistics (NCES) reports that in the 2006–07 academic year, 66% of the 4,160 2-year and 4-year Title IV degree-granting postsecondary institutions in the nation offered college-level distance education courses. The overall percentage included 97% of public 2-year institutions; 18% of private for-profit 2-year institutions; 89% of public 4-year institutions; 53% of private not-for-profit institutions; and 70% of private for-profit 4-year institutions (NCES, 2007). As the growth of distance education has impacted campuses, libraries have been required to incorporate service to distance education students in order to support the larger institutional goals and objectives of their parent organizations. This has altered the library not only in organizational structure and service delivery models, but also in the assessment data needed to account for the new service efforts and resources,

Halachmi and Bouckaert (1996) stated that the unsuccessful deployment of assessment processes was inherent in the nature of the organizational structure and culture of libraries. Halachmi identified four primary groups of organizational factors that prevent libraries from effectively implementing assessment processes:

- Institutional cultural factors, such as resistance to change, procedural and policy impediments, professional standards and philosophies, lack of innovation, and rigid organizational structures and cultures.
- Pragmatic factors, such as an employee ability to improve, ability to learn and use the measures correctly, and organizational cultural artifacts from other previous assessment programs.
- Technical factors, such as maintaining access to ever-changing technologies, skills to use technology in assessment processes, defining metrics, and knowing the effective techniques of assessment.
- Cost factors, such as the costs of assessment processes and the reporting of assessment results and the lost service time or productivity of staff.

Libraries are becoming more business-like in their operations and assessment due to service environment forces. In England for example, the blurred – partially for-profit and partially non-profit – organizational structure has been commonly employed in many governmental agencies, including libraries.
Liddle states libraries were some of the first social agencies that participated in the concept of the blurred organizational structure. One model, called “Best Value,” was implemented in libraries in early 1999. Libraries were asked to not only account for service quality, but also define the values for money and quality of service delivery. The “four C’s” measured the program:

- Challenge: is the service needed at all?
- Compare: involves analysis, comparison, and benchmarking
- Consult: requires authorities to seek dialogue with the public it serves
- Compete: looks for partnerships and private sector involvement (Liddle, 1999, p. 206).

These are very different values than the traditional assessment values that libraries have reported to stakeholders even ten years ago and libraries have had difficulties in making these transitions.

In looking at the symptoms, one develops the sense of the consequences of operating an unaligned assessment process in a library. The alignment of an assessment process occurs when the correct strategic or tactical position/positioning of interconnected components relative to one another are ordered and related to ensure proper and effective performance. Libraries that do not have aligned assessment processes will not have effectively assessment processes, and will be unable to effectively address stakeholder requirements of the evidence of effectively addressing strategic needs in the library service environment. Ineffective reporting of assessment processes lead to negative strategic and tactical consequences for the library and its stakeholders. These negative consequences of ineffective assessment process alignment for a library can be grouped into two major categories: strategic and tactical negative consequences.

Negative tactical consequences are short term consequences that can affect the library for one to two strategic planning cycles. Negative tactical consequences for the library fall into three broad categories: resources, capability, and the intangibles. The negative resource category of consequence includes resource and service reductions (i.e., fiscal, staffing, etc.); staffing and leadership recruitment challenges; and increased demands for future reporting of assessment. The negative capacity category of consequence includes the library’s reduced abilities to benefit from strategic opportunities, partnerships, and collaborative actions that would strengthen the library and its value creation in the service environment and reduce communication gaps and trust issues developing between the library and stakeholders, which further decrease the creation of value by the library. Negative intangible consequences include the lowering of organizational/service environment stakeholders’ morale and expectations, diminished value creation from the library’s intellectual capital assets, and the potential devaluation of the library’s intangible assets and capabilities, further deflating stakeholder’s perceptions of the library’s value production and capability.

Negative strategic consequences are long-term consequences that affect a library for more than two planning cycles. Negative strategic consequences can be grouped into two categories: tangible and intangible. The negative tangible strategic consequences include library stakeholders examine alternatives to existing library and information service delivery; funding and resource provision reductions or the loss of secure funding sources; threatened viability of existing systems and staff; and organizational restructuring and elimination. Irreversible losses of stakeholder market share due to declining resources and diminished service capacity or quality may be an additional potential consequence. The negative intangible strategic consequences include the loss of institutional support and prestige; the creation of stakeholder perceptions of the library as a contributor to failed strategic responses to service environment needs rather than a key component of successful need response; and losses of competitive advantage gained from the library’s intangible assets (i.e., intellectual capital, brand recognition, human capital, etc.) and the service environment value created from them.

Having identified some of the symptoms and consequences of maligned assessment processes in libraries from the literature: (a) what are the characteristics of aligned assessment processes in libraries?; (b) how do we align assessment activities between libraries and their service environments, including distance education customers and stakeholders?; and (c) what service environment factors are driving library assessment alignment processes? Once again, due to the lack of direct research in the area, there was little information available in the professional literature to guide the search in the answers to these questions.
Characteristics of Aligned Assessment Processes

Having an effectively aligned assessment process is a necessary foundation for the effective implementation and reporting of assessment for the library. Libraries with aligned assessment processes use consistent metrics and practices to conduct assessment on all aspects of the library’s services and operations, including distance education service delivery. Assessment methodologies need to be incorporated into the overall strategic planning and decision making of the library and need to be supported by a proactive culture of assessment and dedicated resources to create effective assessment processes. All of the internal and external library stakeholders need access to the assessment process and its results. The results of assessment are compared to the evidence of need from the library service environment for effective coverage and addressment; this is especially the case, and a major challenge, of libraries that deliver distance education services. Assessment processes and metrics should be in a constant state of innovation and incorporation of outside resources, methodologies, and expertise. The assessment processes of the library should be regularly evaluated to ensure that the assessment processes are effectively and efficiently providing the library with necessary strategic information for planning and decision making in all aspects of library operations and throughout their service environment; especially in concern with distance education service delivery. The results of assessment should be valued by the library and the internal/external stakeholders of the library service environment and make a difference in stakeholder support of the library. Aligned assessment builds consensus, improves effectiveness, and strengthens organization cohesion and culture while providing effective assessment evidence to the library’s stakeholders, regardless of where they are or are connected to the library.

A library having an aligned assessment process both internally and between the library and its service environment, including distance education service delivery, has an additional characteristic. This level of alignment of assessment processes is integrally interwoven between the library and all of its service environments, including the distance education student, wherever they are located. This ensures that all library stakeholders -- regardless of location in the service environment -- have access to the assessment process and their assessment information needs are addressed, thus maximizing the stakeholder participation in the assessment process while increasing the understanding and appreciation of the results of the assessment process by all stakeholders. When all stakeholders understand the assessment process and appreciate the results of assessment, it becomes increasingly easier for libraries to effectively provide evidence of accountability, efficiency, and value/impact and compete for resources and strategic opportunities.

Primary Service Environment Factors Affecting Alignment

What are the primary service environment factors that are affecting the alignment of assessment processes in libraries today? In reviewing the professional literature regarding the current service environment characteristics and needs, the author perceives there are four primary service environment factors transforming libraries, therefore transforming their assessment processes and the alignment of the assessment processes. The four primary service environment factors are displayed in Figure 1.

![Figure 1. Major library service environment factors affecting library assessment.](503)
As displayed in Figure 1, the first factor is the mission/scope of the library. As the service environment transitions in terms of stakeholders, needs, resources, etc. to encompass distance education service delivery and the dynamic mission of the library, the scope of its service range has been expanding and becoming more intangible to the library. Libraries are serving more of a mission today than that of the historic library and information services mission and lifelong learning. In addition to these traditional missions, libraries are also being required to provide mission support as community centers, support public schools and literacy, promote economic development and tourism, and train the public in the use of technology in support of the distance education mission and needs of the parent institution. Additionally, with technology advances libraries not only regularly serve those who reside next door to the library, but those on the other side of the planet. These changes in mission and scope require changes to the operational and strategic provision of services and thus the assessment of the provision of these services.

The next service environment factor is the resources available to support the library in performing its service provision. The service environment has a finite amount of resources and as the number of missions, the size of scope, the amount of competitors for resources, and the needs of those in the service environment increase, the resources available to libraries is generally not growing correspondingly to account for these transitions. As more resources are transitioned from traditional library service delivery to support distance education service delivery, strategic decisions have to be made that require assessment information from outside of the library. Therefore, the library has to determine and report all of the evidence of effectiveness, impact and value creation possible to address resource management and accountability needs to maintain existing resources and develop new resources to supplement their needs. This makes resource competition (i.e., effective assessment and accountability) a priority for the library if it is to ensure its best chance of being strategic successful in all aspects of their service environment and in all areas of service delivery (e.g., internal and external to the library).

The participation/stakeholders service environment factor is somewhat a product of the first two factors discussed. As the mission, scope, and number of needs to address increase and the resources to address these needs is declining or remaining constant, the library is experiencing a wider diversity of stakeholders in more distant areas of service, with broader needs. Each group of stakeholders wants to ensure its needs are effectively met and are actively seeking access and participation in the strategic planning and decision making processes of the library. This participation and access also extends to the assessment processes of the library, where the evidence of effectiveness and need frequently meet.

The final primary service environment factor is technology, which is an integral player in the other three factors identified. Technology has been one of the primary transition conduits between the library and its service environment, enabling the delivery of distance education services and one in which the future has no immediate ending or slowing of growth. Technology is also becoming more of an integral component of the assessment process as so much of the distance education service delivery is based in the library’s technology resources. Technology has enabled the diversification of the mission of the library; broadened the scope and types of library services and resources available to all of its stakeholders; has further divided resource allocations in support of service; and has increased stakeholder access to services and resources of the library. All of these effects on the library’s business model and models of service delivery have directly affected the assessment processes of the library and the need to continuously align the assessment processes to account for changes.
Figure 2. Service environment factors interaction results.

The combined impact of the interactions between the four primary service environment factors create additional drivers of transition and challenge for the library’s operations, and therefore its assessment processes and alignment. Accountability, access, competition for services, distance education support, information literacy, innovation, participation and value are the service environment factors that result from the interactions of the primary factors. All of these factors drive the library to transition itself and its services. Increased accountability for the library’s resources and performance; access to and participation in library services and resources from non-library stakeholders; increased competition for the provision of library and information services; supporting wider educational needs via distance education and information literacy; maintaining the currency of technology and service provision in correspondence with other service innovations of the service environment; and increased need to create value for all of the service community are all factors that drive the transition to the library and its interactions with its service environment. These transitions become the challenges to assessment alignment for libraries and to keeping the library interacting effectively with the service environment and stakeholders it serves.

Conclusions

There is little evidence to describe the characteristics of effective alignment of assessment processes in libraries or the challenges in achieving alignment in assessment processes. With so many of today’s libraries uncertain how to effective assess their efforts and value creation, how can a library begin to create an aligned assessment system that aligns not only itself but the library to the service environment, especially when the library needs to most effectively report its value and when so many factors are challenging the libraries ability to align its assessment processes? After examining the literature and practice of aligning assessment processes, the author has developed a conceptual model that may illustrate how a library can take the steps to effectively align the library assessment processes with the service environment and stakeholders it serves. The model is offered by the author as no evidence of an existing model to align assessment processes can be located in the literature or research.
Conceptual Model of Assessment Alignment

The author’s conceptual model of aligning assessment processes has been developed to describe the characteristics of assessment process alignment and the progress sequence necessary to effectively align the library assessment processes with the service environment and stakeholders it serves. The evolution of the assessment process alignment from “unaligned” to “effectively aligned” between the library and the service environment is called the Progressive Alignment of Library Assessment Processes to the Service Environment. Figure 3 illustrates the goals of progressive alignment; creating a continuing alignment of library assessment processes and the major service environment factors driving the library service challenges and needs between the library and its service environment.

Figure 3. Progressive alignment of library assessment processes to the service environment.

Figure 3 illustrates the five steps of the progressive alignment of library assessment processes: Non-aligned, Practice, Process, Organizational, and Environmental being aligned against the major service environment factors of technology, participation/stakeholders, resources, and mission/scope.

The Progressive Alignment Model

Non-Aligned Step

The Progressive Alignment Model begins the internal library alignment process with the Non-Aligned Step. Non-aligned assessment is simply the absence of any effective alignment characteristics. Assessment processes are not aligned even internally to the library and the results of assessment and the reporting of value is ineffective at all levels. The primary assessment reporting is limited mainly to inputs and outputs of the library’s services and efforts. The characteristics of non-aligned assessment processes and the other four steps of the Progressive Alignment Model are fully described (see Table 1).
Table 1

*Progressive Alignment Step Characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Non-Aligned</th>
<th>Practice</th>
<th>Process</th>
<th>Organizational</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metrics</strong></td>
<td>Inconsistent use of metrics</td>
<td>Consistent use of metrics for assessing projects, programs, services efficiency</td>
<td>Practice description plus metrics used for determining internal assessment of effectiveness</td>
<td>Process description plus metrics used for internal assessment of value reporting</td>
<td>Organizational description plus metrics used for all external assessments of library service environment impact over time</td>
</tr>
<tr>
<td><strong>Methodologies</strong></td>
<td>Inconsistent or non-existent use of assessment methodologies</td>
<td>Consistent use of methodologies for assessing key projects, programs, services</td>
<td>Practice description plus methodology for assessing all projects, programs, services</td>
<td>Process description plus inclusion in tactical planning and decision making</td>
<td>Organizational description plus integration of methodologies into strategic planning and decision making process</td>
</tr>
<tr>
<td><strong>Culture / Resources</strong></td>
<td>No culture of assessment, no dedicated resources to assessment processes</td>
<td>Rudimentary culture of assessment; some dedicated resources to assessment processes</td>
<td>Practice description plus widely accepted culture of assessment; internal resources dedicated for all assessment processes</td>
<td>Process description plus proactive culture of assessment; external resources made available for all assessment processes</td>
<td>Organizational description plus innovative / fully integrated cultural assessment; strategic planning for resource allocation of future assessment processes</td>
</tr>
<tr>
<td><strong>Stakeholders</strong></td>
<td>Inconsistent or non-existent involvement of stakeholders in assessment processes</td>
<td>Consistent involvement of some key internal stakeholders in parts of reporting assessment results</td>
<td>Practice description plus involvement of all internal / some key external stakeholders in reporting assessment results</td>
<td>Process description plus involvement of all stakeholders in all aspects of conducting / reporting assessment</td>
<td>Organizational description plus involvement in design and planning of assessment processes</td>
</tr>
<tr>
<td><strong>Service Environment Understanding</strong></td>
<td>Inaccurate or incomplete information on service environment and needs</td>
<td>Selective information on service environment and needs as received</td>
<td>Practice description plus periodic efforts to update key service environment information / needs</td>
<td>Process description plus regular updating of all service environment information / needs</td>
<td>Organizational description plus proactive integration of library and service environment information / needs</td>
</tr>
<tr>
<td><strong>Innovation of Assessment</strong></td>
<td>No innovation of assessment processes, metrics, methodologies</td>
<td>Isolated incidents of innovation of library assessment metrics</td>
<td>Practice description plus periodic innovations of key metrics, methodologies</td>
<td>Process description plus regular innovations of all metrics, methodologies</td>
<td>Organizational description plus proactive innovation of all metrics, methodologies</td>
</tr>
</tbody>
</table>

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### Non-Aligned

<table>
<thead>
<tr>
<th>Examination of External Assessment Resources / Options</th>
<th>Practice</th>
<th>Process</th>
<th>Organizational Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>No examination of external assessment sources of innovations, methodologies, and metrics</td>
<td>Methodologies, processes as necessary</td>
<td>Processes</td>
<td>Processes</td>
</tr>
</tbody>
</table>

**Practice Alignment Step**

The next step of progressive alignment is *Practice Alignment*, which is generally characterized as the initial efforts to align assessment processes to the library strategic needs. Assessment in this step is rudimentary, irregular, unorganized and self-contained to key elements of the library’s internal stakeholders. Assessment in this step is primarily geared to reporting the efficiency of the library’s services and efforts though assessment of key projects, programs and service. The results of assessment are used in tactical planning and decisions, however not yet valued beyond the key internal stakeholders and the results of assessment are not widely integrated into the strategic organizational structure, processes, and culture.

*Practice Alignment* is the step that begins developing the consistency of practice in the use of methodologies and metrics in assessing key strategic efforts of the library and is where the first occurrences of the culture of assessment become evident. From here, the library’s alignment would expand its scope and ability to the Process Alignment step.
**Process Alignment Step**

*Process Alignment* is described as having the consistency of metrics and methodologies in assessment processes that involves all internal stakeholders and key external stakeholders. The focus of the assessment in this step is on the effectiveness of the library’s service and strategic responses. Assessment in this step is regular, organized and routine exceeding the boundaries of the library to address key elements of the library’s external stakeholders and include them in the assessment processes. A culture of assessment exists and is beginning to support the assessment processes of the library with adequate internal resources and adapting some assessment innovation from other service industries. The results of assessment are beginning to be incorporated with the Library’s service environment information and needs assessments. The processes and results of assessment are participated in and valued by all internal stakeholders and key external stakeholders. The results of assessment are integrated into the key strategic organizational structures, processes, and culture.

**Organizational Alignment Step**

The next step of progressive alignment is *Organizational Alignment* which is generally characterized as having a mature, internally aligned, and effective assessment process to address library’s strategic information needs. Assessment in this step is advanced, proactive, regular, organized and open to all of the library’s stakeholders. Assessment in this step is primarily geared to reporting the impact and value of the library’s services and efforts in the library’s service environment. *Organizational Alignment* has a proactive and vibrant culture of assessment that supports all assessment processes with effective delivery and access to internal and external sources of resource, innovation, and expertise. The results of assessment are fully aligned with all of the library’s internal operations and are used in strategic planning and response decisions. The results of assessment are highly valued, understood, and appreciated by all of the library’s stakeholders. The results of assessment are the foundation and integral component of the strategic organizational structure, processes, and culture of the library and are accessible to and understood by all internal stakeholders and drive all strategic planning and decision making within the library.

The first four steps of progressive alignment occur internally within the library. As the external factors increase in contribution to the challenges of assessment process, the alignment needs and efforts of the library increase and the scope and ability of the library to align itself has to increase correspondingly. Only when the internal alignment of the library’s assessment processes is mature and effectively aligned, can the library effective align itself to its service environment and stakeholders.

**Environmental Alignment Step**

The final step of the Progressive Alignment Model, the *Environmental Alignment* step, straddles the boundary between the library and its service environment. Environmental Alignment is equally composed of three foundational components: the library’s ability and capacity to effectively conduct and report assessment, the interactions between the library and its service environment/stakeholders in the library assessment processes, and the primary service environment factors and needs from the Library’s service environment. The *Environmental Alignment* step is operated and supported by the Library and the Library’s service environment/stakeholders, but owned by none.

Assessment in the *Environmental Alignment* step is innovative and adaptive, proactive, and highly integrated into all tactical and strategic efforts of the library and the library service environment. Assessment in this step is primarily geared to reporting the impact and value of the library’s services and efforts in the library’s service environment over time to all stakeholders through interaction and participation. *Environmental Alignment* has a proactive and vibrant culture of assessment that supports all assessment processes with effective delivery, strategic planning, and access to internal and external sources of resource, innovation, and expertise. The results of assessment are fully aligned with all of the library’s operations. The service and the assessment information needs of the stakeholders in the environment served by the library are effectively included in assessment process planning and implementation and used in strategic planning and response decisions. The results of assessment are highly valued, understood, and appreciated by all of the library’s stakeholders. The results of assessment are the foundation and integral.
component of the strategic organizational structure, processes, and culture of the library. Results are accessible to and understood by all library stakeholders and drive all strategic planning and decision making within the library, ensuring direct impact in the Library’s service environment for its stakeholders.

The *Environmental Alignment* step is only effectively achieved when the previous four steps of alignment are effectively achieved (i.e., the complete internal alignment of assessment processes within the library.) Without effective internal assessment alignment, the library cannot establish an effective *Environmental Alignment* as the internal alignment (i.e., effective assessment processes) is an equal foundational component that jointly supports the other two foundational components. Without the internal alignment, the foundation of the *Environmental Alignment* would be like a three-legged stool missing a leg and unable to maintain balance or support the stool under strain. Once, achieved, the *Environmental Alignment* step must be constantly re-aligned with the dynamic service environmental forces and needs as they transition both the library and the service environment to remain effective for both the library and its service environment.

**Potential Benefits of Conceptual Model**

Effective and aligned assessment processes are a necessary condition to library competitiveness and success in today’s dynamic service environment. If the primary process (i.e., assessment processes) that collect strategic information for the library are not effective or non-aligned to its internal information needs or the reporting of value creation and effort to the Library’s stakeholders, the Library cannot make the best decisions in developing strategic responses and reporting its value. Many libraries today are presently in a state where they do not operate an effective assessment processes or need to transition their assessment processes to align with the dynamic challenges and needs of their service environment and their own internal strategic information needs for planning and decision making. However, there is little support (i.e., tools, models, best practices, etc.) for libraries to use to help them take these necessary actions to create effective and aligned assessment processes.

The potential benefits of the use of the *Progressive Alignment Model* would come as libraries developed the key characteristics of effective assessment processes that were aligned to their strategic information and value reporting needs. Having an effective and aligned assessment process maximizes the Library’s assessment processes commitment, resource allocations, and reporting value. Identifying an effective model to support libraries in developing effective and aligned assessment processes is a critical strategic need. Libraries that can align assessment internally and align the Library with its service environment through assessment processes have the potential to increase the scope, trust, and power of their reporting of efficiency, effectiveness, impact, and value over time to all of its stakeholders. The more effective this reporting, the more strategically responsive and successful the Library can be perceived to be in its service environment and the more competitive or sustainable the library is in providing service and value to its service environment.
References


Appendix

Background & Suggested Readings


Assessment Planning for Distance Education Library Services: Strategic Roadmaps for Determining and Reporting Organizational Performance and Value

Larry Nash White
East Carolina University

Abstract
Through a review of the literature, the author sought to identify which assessment planning practices exist in libraries, how the assessment planning process works in libraries, and which components constitute a library assessment plan. The findings suggest that, while libraries determine and report a great many aspects of organizational performance, general assessment planning that encompasses total organizational impact and value is not frequently used or integrated into the library’s comprehensive strategic planning process, and does not always effectively cover the scope of the assessment activities and information needed by organizational leaders and administrators to develop effective strategic plan and decisions. This lack of integration creates disconnects between the library’s ability to determine and report organizational value and the library’s need to provide accountability evidence to stakeholders and use the performance measurement results effectively in executing strategic planning and decision making. Using the findings of the review, the author proposes an alternative set of assessment planning components and focus areas.

Background
Assessment planning is a critical component of an overall strategic planning process for an organization. Assessment results (and their proper analysis for meaning) provide organizational leaders, administrators, and stakeholders with information to determine effectiveness and efficiencies within the organization while ensuring resource maximization in usage. The assessment process results enable organizational leaders to initiate future-oriented organizational strategic decision making and planning in order to develop and execute a roadmap of activities that generate organizational impact or value for its customers and stakeholders. Thus, the assessment planning process (and its results) serves as the foundation for the organization’s strategic roadmap. Organizational leaders develop and adjust this strategic roadmap in order to generate the most effective strategic outcomes and value creation possible for the organization’s customers and stakeholders. The success or effectiveness of the organizational leader’s ability to develop and adjust the strategic roadmap for the organization and be able to determine and report assessment information is critically dependent on having an effective assessment planning process in place in the organization.

Literature Review

In conducting a literature review on assessment planning, the author examined the library and information science as well as the general business literature for references to organizational assessment planning processes, techniques, components, and effectiveness. The business literature was included in the literature review for two reasons: libraries have historically tended to adopt business assessment metric and processes, and the author desired a comparative perspective to the review for greater analysis.

The results of the library and information science literature review led to several general conclusions:

- There are very few references made to assessment planning for the whole of an organization and its financial impact or value. Most findings specifically dealt with assessing smaller
components/activities of the organization instead of the organization as a whole or in reporting qualitative outcomes.

- The references made to assessment planning were most frequently focused on planning outcomes assessment for components or activities of the library organization, and did not look at the whole of the organization in terms of determining and reporting financial impact and value.
- When assessment planning is referenced, the process is performed almost exclusively as a separate process in the strategic planning processes of the organization and is not generally found in most libraries’ organizational strategic, tactical, or long-range plans.
- The assessment planning performed is primarily focused internally on effectiveness and outcomes (especially in academic, school libraries) and efficiency (public libraries) assessment results. Thus, the resulting data and information (and its analysis) are limited in scope and usefulness to library organizational leaders in determining and reporting financial impact/value or in strategic, tactical or long-range planning activities.
- Libraries tend to use the same limited number of assessment and assessment planning activities over time. There seems to be very little innovation from within the library profession itself in the area of assessment, especially in the areas of metrics, analysis, and use or customer/service environment feedback mechanisms in the assessment planning process.
- Libraries tend to use less complex assessment processes and planning activities, meaning that the results of these processes often lack the sophistication necessary to provide an effective ability to determine and report organizational both financial and outcome impact and value or effectively address the organizational leader’s information needs for creating the organizational strategic roadmap.
- Of the few references to assessment planning in the literature, most assessment planning processes (whether for a component of the organization or the whole organization) were not designed to account for technology services, options, and development. Online services and customers and the scope of organizational impacts created by technology in service delivery are frequently not accounted for in assessment planning processes.

An example of the literature findings for assessment planning in the library science literature includes White’s (2002) findings of a statewide study of performance assessment and metrics use and perceptions by public library administrators. White concluded that there was little evidence of a culture of assessment to support performance assessment or assessment planning. Assessment was not generally planned or referenced in the library’s organizational strategic and long range planning leaving a non-focused and non-integrated assessment processes to operate. Additionally, there was little evidence to support a consistent resource commitment to support assessment activities and assessment planning processes, so there was little expectation of an effective assessment to operate. Assessment in general was almost exclusively an internally-focused process, so assessment planning (and the results of assessment planning) did not seem to be stressed, assessed, or accessed by library administrators and stakeholders. In combination, these findings explained and supported one of the study’s major findings: a wide-reaching perception of a lack of perceived value in assessment processes and planning by library administrators.

In the review of the business literature, assessment planning was more frequently referenced in general and assessment planning integration into the whole of the organization was more often noted than in library and information science literature. Assessment planning for determining the impact and value of the whole organization as well as component aspects or activities of the organization were frequently referenced in the literature. The general findings of assessment planning in the business literature include:

- Assessment planning in businesses frequently focused on determining and reporting financial organizational value and value creation, cost avoidance, return on investment (ROI) and return on assets (ROA).
- Assessment planning was frequently integrated into organizational strategic, tactical, and long-range planning processes and was conducted on a regular basis.
Assessment planning and the metrics of assessment seem to include regular innovation of the assessment metrics and processes, with assessment planning reflecting these ongoing innovations.

Assessment planning in most businesses was a complex processes, using complex assessment metrics and processes, yielding a more sophisticated assessment result for organizational leaders to use in strategic decision making and planning.

Assessment planning in businesses frequently incorporated consideration of intangible financial impacts and values used or created by the business organization.

Businesses tended to support and operate a stronger culture in support of assessment planning processes.

**Developing an Assessment Plan**

In developing or implementing an effective assessment plan, it is critical to identify and include those components of the plan that ensure its effectiveness. The results of the literature review showed that there are a number of variations in the types of assessment plan components and their use in the library and information science and business literatures. However, the author was able to develop a generalized component list of the more traditionally identified assessment plan components in library assessment planning: goals, objectives, metrics (indirect), metrics (direct), data collection, analysis, and reporting. Using the occurrence rates of specified uses, the author has prepared a generalized frequency tool showing how each of the general assessment plan components is used in the assessment planning process in libraries to determine and report results. These frequencies are described in Figure 1.

<table>
<thead>
<tr>
<th>Assessment Plan Component</th>
<th>Efficiency</th>
<th>Effectiveness</th>
<th>Financial (i.e. Return on investment (ROI) / Return on assets (ROA) / Cost avoidance / Value)</th>
<th>Community Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>✓ ✓ ✓</td>
<td>✓ ✓ ✓</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Objectives</td>
<td>✓ ✓ ✓</td>
<td>✓ ✓ ✓</td>
<td>❏</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Metrics (indirect)</td>
<td>✓</td>
<td>✓</td>
<td>❏</td>
<td>✓</td>
</tr>
<tr>
<td>Metrics (Direct)</td>
<td>✓ ✓ ✓</td>
<td>✓ ✓ ✓</td>
<td>❏</td>
<td>✓</td>
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<td>Data Collection</td>
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</tr>
<tr>
<td>Analysis</td>
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<td>✓</td>
<td>❏</td>
<td>✓</td>
</tr>
<tr>
<td>Reporting</td>
<td>✓ ✓</td>
<td>✓</td>
<td>❏</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Figure 1. Component frequencies of use in assessment plans: traditional format.*

✓ = *Infrequently*  ✓ ✓ = *Consistently*  ✓ ✓ ✓ = *Frequently*

**Analysis of Component Frequency and Use**

One of the observable trends in assessment plan component use is how infrequently all of the library assessment plan components address the financial impact or value information needs routinely and ideally to be addressed through assessment planning. As noted earlier, the literature suggests that assessment activities in libraries do not seem to focus on determining and reporting financial organizational impact and value, thought here is a frequent use of more qualitative impact assessment (i.e. outcomes).
Assessment activities and planning generally occurs on a smaller organizational or performance level than the whole of the organization. So while libraries are becoming more aware of the need and value of determining and reporting the financial impact and value of the whole library’s performance, many libraries still do not fully utilize assessment planning or activities in library wide financial assessment planning or activities.

One will note in reviewing the table and the frequency categories that the focus of the assessment component categories seems to be mostly internal to the library and not external to the library’s service environment. With the increasing need to determine and report organizational impact and value, new developments in the use of technology to deliver and assess library services, impact, and value, and a constant dynamic of change in the service environment and how the library performs its effort in meeting strategic needs in the service environment (which tend to reinforce more of a smaller level or organizational assessment scope), there may need to be a shift from the traditional accountability types of component use to a more flexible and engaging type of use to help the libraries adapt their assessment planning processes and allow the assessment process to focus more on the strategic impacts and value at the organizational level. This could also allow the library to transition its internal assessment planning focus to either an external assessment planning focus or the more desired combination of internal to external assessment planning focuses to maximize the assessment planning process for the whole organization.

Also observable is that many types of libraries (especially academic and school libraries) use outcomes assessment to demonstrate the organizational impact and value of the library to customers and stakeholders. The literature suggests that the use of outcome assessment in public libraries is becoming more frequent, especially in the areas of determining and reporting community impact to outside funding sources (e.g. grant agencies). As outcomes assessment is more qualitative in nature and most effective when used to address qualitative performance inquiries, and is predominately used to determine impact and value on a smaller scale than the whole of the library organization, this leaves a gap in the both the assessment planning scope/coverage and the resulting assessment information available to library leaders and administrators for developing strategic plans and in strategic decision making.

Most notably apparent is the consistent lack of assessment plan goals or objectives that focus specifically on determining the financial impact and value of the library’s efforts. As earlier noted, assessment planning is not frequently used to report the whole organization’s impact and value and is not frequently included or integrated into the overall strategic, tactical, and long range planning of the library organization. When the assessment plan does not include goals or objectives to determine and report financial impact and value for the whole of the library, one should not be surprised that the results of the assessment planning process do not effectively determine or report impact and value of the library. The joint effect of these conditions suggest that the lack of assessment planning and activities provide library leaders and administrators without the most effective information to use in strategic planning and decision making process, thus the library creates less of a strategic impact and value than possible.

Future of Assessment Planning

Libraries today (and even more so in the future) will asked by stakeholders and customers to provide increasing amounts of evidence of the impact and value of their efforts, especially in the financial value information area. As stated in the analysis section, the review of the literature shows that there are some significant opportunities for improving assessment planning processes. One area in particular that assessment planning has opportunities in determining and reporting organizational value and impact (especially in the financial area) is in the areas of intangible efforts, resources, impact, and value that are not traditionally reported in library spreadsheets and assessment planning. Traditionally these have been called “library goodness factors” but in modern terms are referred to as intellectual capital, social capital, and human capital. When a library fails to determine and report its intangible resource use and value and the resulting intangible values created, it significantly underreports its overall organizational impact and value and increases the management challenges of these intangibles by library administrators and leaders.

In preparing for the future of assessment planning for libraries, explorations of possible new assessment planning techniques, components, and focuses need to be explored to allow for the transitions,
innovations, and improvements suggested. One such possible set of assessment planning components is displayed in Figure 2. The proposed assessment plan components and their focus areas may be a first step in transitioning from the current format and uses of assessment planning and its results. The proposed component types identify the areas of assessment information necessary to integrate and align the assessment planning process with the other strategic planning and information needs of the organization. The focus areas are not the traditional internal-looking focus areas (i.e. efficiency, effectiveness, costing, and outcomes). The proposed new focus areas will serve to connect and direct the organization’s determination of impact and value toward a more organization-wide focus that began to account for some of the missing areas of impact, value, and financial analysis while allowing a wide scope of emphasis within the use. This flexibility of use would allow libraries an opportunity to innovate their assessment planning components, metrics, and uses while keeping the wider organizational focus needed to allow the assessment plan to serve as an effective strategic roadmap to the future success of the library organization.

<table>
<thead>
<tr>
<th>Assessment Plan Components</th>
<th>Customers / Stakeholders</th>
<th>Intangible resources / efforts</th>
<th>Financial Impact and Value</th>
<th>Knowledge / Expertise</th>
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<td>Strategic Needs</td>
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<td>Learning</td>
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<td>Entrepreneur / Innovation</td>
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<td>Accountability / Access</td>
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<td>Alignment</td>
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<td>Demonstration</td>
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<tr>
<td>Analysis / Feedback</td>
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*Figure 2. Possible Assessment Plan Components and Use Focus Areas*
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POSTERS
Elluminate Live and Jing: Instruction for Synchronous and Asynchronous Online Classes

Ramirose Attebury
University of Idaho

Abstract
This poster session will describe the University of Idaho Library’s use of the virtual classroom software Elluminate Live to provide instruction to synchronous classes and the use of the open-source screencast software Jing to provide instruction to asynchronous classes. It will address the manner of usage of each type of software, the benefits and drawbacks to each, and course instructor feedback gathered after instruction occurred. Viewers of the poster will learn from the trials and errors of the presenter and be given tips for making use of each product for off-campus-library instruction. For example, Elluminate Live offers users a WebTour option through which the instructor can show students around any website he or she wants. While this feature initially seemed ideal for showing students how to use the library’s databases, it was quickly discovered that off-campus validation required each student to log in through the proxy server to see what the librarian was doing. Because not all students had set up accounts yet with the library, not all were able to log in, and even those who were soon found themselves on different pages from the librarian because of a time lag. A subsequent library instruction session instead make use of Elluminate Live’s Application Sharing feature, which lets users see the librarian’s desktop, eliminating the need for an off-campus login. In addition to the printed poster, this presentation will also provide electronic examples of both Elluminate Live and Jing. The former offers users a 3forFree room that allows a maximum of three users to login at once and make use of all Elluminate Live features. Two laptops will be provided so those viewing the presentation can test some of the software’s features and see the interchange between users. Additionally, examples of the screencast videos made with Jing will be available for viewing on the laptops, and viewers will be able to see Jing’s screenshot capture feature, which allows shots captured to be embedded in other media, such as Blackboard or a PowerPoint presentation.
Online Liaison: Creating a Comprehensive Web Presence for the Health Sciences

Maria R. Barefoot
Youngstown State University

Abstract
The Youngstown State University health sciences programs face a mixture of distance, commuter, and resident students. In order to connect with the student body and faculty more effectively, the liaison librarian focused on creating an online presence that the students and faculty would recognize as a valuable resource. Because of the blended nature of the programs, it was necessary to present a cohesive image online and on-campus. To do this, the liaison librarian created an online hub in the form of a blog which allowed for both regular posts and static web pages. The regular posts are compiled monthly into a newsletter that circulates to the faculty and students virtually through email and physically on campus. The static pages are used to post instruction handouts, video tutorials, and quizzes. These tools are used in formal instruction for on-campus students and circulated to the faculty to be used by distance and commuter students. The video tutorials provide online instruction for distance students similar to what is covered in the classroom for on-campus students. The librarian also created a Facebook page to reach out to more students. After adding students and faculty as friends, she is able to post the regular blog updates to her liaison Facebook page. The results of these efforts can be seen in the raw data collected from the page tracker for the Health Sciences Blog which will be presented in the poster. The data shows that page loads and unique visitors increased significantly during the weeks that the blog was used in a classroom setting, the newsletter was sent out, or posts were made to Facebook. The changes in page loads can be used to show how often the site was used, and in what locations. Many relationships have also developed between the librarian and off campus students who were drawn to the library through the Blog. These results, which will be displayed in the poster, show that creating a central hub and a persistent online presence made a positive impact on how distance students use the library. Continuing efforts in this area include publicizing the blog to new faculty and students, updating the blog regularly, continually searching for students and faculty to add as friends on Facebook, and creating video responses to reference questions.
Issues Facing the Creation of Future Libraries in Multi-Cultural Virtual Worlds

Emily Blankenship
Library Technologies Unlimited

Abstract
Library faculty members at East Carolina University surveyed members of the Library and Information Technology Association (LITA) and members of the Second Life Librarians group during the Summer of 2008 to confirm or dispel commitment assumptions concerning virtual world librarians. Specific issues shared by respondents included need for ample computing support to perform virtual library work, need for acknowledgement of the potential of virtual library use by library administration, unblocking of virtual world software, and positive response to requests for allotted time for initial virtual world skill learning curves. By using survey data, librarians may prove to library administration the achievability of virtual library services and subsequently create dynamic virtual libraries for users.
The Usefulness of RSS Feeds to Enhance Student Access to Recent Research

Billie Anne Gebb  
Mary R. Nichols  
Frontier School of Midwifery and Family Nursing

Abstract
The objective of this project was to demonstrate how Really Simple Syndication (RSS) can be used within an online course to enhance student access to research studies. Graduate nursing students are required to utilize several research studies from the nursing literature, but students often have difficulty finding the articles or journals in the school’s online library. The course faculty and librarian decided to address the problem with graduate level nursing students by using RSS feeds to provide the students with quick access to current research articles in specific nursing research journals. Ten nursing research journals were selected based on their content, reputation, availability from the library, and availability and compatibility of an RSS feed, and RSS feeds for these titles were integrated into two online graduate nursing courses. Using the services of rssinclude.com and a little technical support, the course faculty and librarian put display boxes for the RSS feeds of the selected journals directly into the two online courses. Students can now view the titles and abstracts of the most recently published articles with one click access to the full text. While the article feeds will not replace the student’s need to do a traditional literature search, it gives them easily accessible examples of recently published appropriate studies. Students reported that these feeds were extremely valuable to them to keep up to date on the latest published research that was useful not only in the theories and research courses, but also for other courses where research evidence and recent research findings are used for best clinical practice and evidence-based nursing practice. This access was also helpful in the professional socialization of graduate students as a basis for learning professional writing skills while using and becoming familiar with excellent peer-reviewed nursing research articles. RSS feeds can be used with almost any journal and for any course to provide current awareness of recently published literature. In addition to journal feeds, feeds from applicable blogs or news services can also be integrated into courses. These services can be accessed from a variety of electronic resources and expand the library services available from an online library in distance education programs.
Vodcasting: Anywhere, Anytime

Martin Goldberg
Patrice Clemson
Pennsylvania State University

Abstract
An undergraduate campus received a demonstration grant to develop and disseminate vodcasts (video podcasts) for students. A campus committee coordinated, wrote, and produced a series of vodcasts on using the university ID card, how to locate books on the catalog, core college skills, etc., resulting in a virtual campus tour. Included in the production were students who not only acted in the videos, but assisted in production. Students in physics, biology, and information sciences had access to short (2-5 minute) review video lessons. Production of vodcasts is easy to learn, inexpensive, and fast. Students are quite familiar with iPods for entertainment and are able to download the vodcasts. Efforts are underway to expand the number of videos into all areas of campus activities.
Teaching with Technology: Library Resources for Blackboard

Renée Goodvin
Sul Ross State University

Abstract
In the spring of 2009, the Bryan Wildenthal Memorial Library at Sul Ross State University introduced a new service to faculty who are using Blackboard to either conduct their classes online or to supplement their in-class lectures. The goal of this service is to collaborate with faculty using Blackboard by integrating library resources into specific Blackboard courses, and, as a result, provide information literacy services via the Blackboard platform. In order to achieve these goals, the Education Coordination Librarian markets these services to faculty who use Blackboard by collaborating with Sul Ross's Blackboard administrator. When a faculty member makes a request to include library resources into his or her class, the Education Coordination Librarian first discusses the goals and objectives of the class with the faculty member along with any special requests he or she has and is then added to the Blackboard class in the role of a Teaching Assistant (TA) by the Blackboard administrator. From there, the Education Coordination Librarian determines how best to add the library resources into the Blackboard course and creates access points. The Bryan Wildenthal Memorial Library has only been offering integration of library resources into Blackboard courses since the Spring 2009 semester, but some observations have already been made. Faculty are interested in adding library resources to Blackboard courses but are unsure how to integrate these materials into their classes. Discussion and collaboration with the Education Coordination Librarian alleviates this problem. In general, faculty members who have had library resources integrated into their classes seem to believe that adding library resources to their courses helps to bring the class to a higher level and have seen improvement in the quality of student research papers. In addition, Blackboard has the ability to track certain statistics and those statistics allow one see how often certain areas of Blackboard are used. An informal survey based on those statistics has shown that classes with direct access to specific online journals have boosted online journal usage. This poster session will highlight the manner in which the Education Coordination Librarian assists faculty and prepares library resources for Blackboard courses as well as touch on services to be offered in the future.
Ubiquitous Library E-Learning: Implementing Library Tutorials with Adobe Presenter

Catherine J. Gray
Idaho State University

Abstract
At Idaho State University, we have endeavored to instruct our students on how to use the many resources and services that the Library offers. Increasingly, students want online instruction. Working under this premise, we have sought to meet students’ needs by creating relatively brief audio tutorials. This poster explains how we have tackled this project, including background and a timeline, making it work, marketing the final product, assessing outcomes, and knowing what to avoid. We use Adobe Presenter software to create these tutorials on MS PowerPoint slides. We anticipate that distance, non-traditional and traditional students alike will take advantage of these audio tutorials.
Battling the Budget: Online Tutorials the Thrifty Way

Lua Gregory
University of Redlands

Abstract
Online tutorials are a staple to meeting the informational needs of off-campus students. This service is even more essential at libraries that are understaffed and facing budget cuts. How can librarians create online tutorials when they lack the funds to purchase screen capturing software such as Adobe Captivate? Fortunately, there are plenty of free, online options librarians can consult to begin creating their own online tutorials. This practical poster session will highlight freely available resources that allow for snapshots of onscreen activity and movement.
Evaluating Existing Library Services to Support New Distance Learning

Dorothy C. Lockaby
George Mason University

Abstract
George Mason University is a relatively young state-funded institution with approximately 30,000 students enrolled at the bachelor's, master's, and doctoral levels. Although considerable educational technology support exists at Mason and interested faculty members have taught courses online or as hybrids for many years, in 2007 the University reached the threshold of offering several graduate programs that could be taken substantially or entirely online, and a task force was created at the university level to examine the existing infrastructure and to make recommendations for the support of the programs by the University. The Information Technology Unit (ITU), of which the University Libraries is a division, appointed a Library and Learning Resources Subcommittee of its Distance Education Committee to formulate a section of the Distance Education Task Force Report of Findings, which was issued in May 2008. The presenter was the University Libraries' representative to the Library and Learning Resources Subcommittee, and had the task of evaluating existing library resources in a systematic way, writing a report that discussed the suitability of existing library resources to support distance learning, and concluding with recommendations for additional resources and services for the Libraries. After the Report of Findings was released, a Distance Education Council was formed in 2008-2009 to continue to coordinate support for the University's distance programs, and the presenter continued as the University Libraries' representative on this council. The poster session examines the criteria used to inventory and evaluate existing library services that could support distance learning, the criteria used to determine what other services and resources might be needed, and the process used by the subcommittee and presenter to arrive at recommendations.
Improving Communication Through Screencasting

Linda Musser  
Pennsylvania State University

Abstract
One of the challenges of serving off campus users is finding ways of moving beyond describing tasks to also showing how to complete tasks. Screencasting is rapidly becoming a popular way to achieve this end. Commercial software such as Captivate and Camtasia have been joined by free software such as Jing and Screentoaster, making such technology much more accessible. Use of screencasting software has not yet been widely adopted by librarians, however. Several uses of screencasting to improve communication with remote users will be described. These include creation of on-demand tutorials; using screencasting for troubleshooting and technical support; and screencasting as a training aid and a tool for technology adoption. Broader adoption of this technology will improve outcomes for the users we are trying to serve.
Going the Distance: Creating an eLibrary for Non-Traditional Students

Gerald Natal
Phoebe Jane Ballard
Bridget Faricy-Berado
Elaine Marle Reeves
Arjun Sabharwal
University of Toledo

Misa Mi
University of Toledo, Health Science Campus

Abstract
Librarians and staff at the University of Toledo Libraries endeavored to create a virtual library (eLibrary) utilizing Blackboard, the web-based course management system, to provide unique services to distance-learners. The scope was expanded to make the eLibrary accessible to any students who take online or web-enhanced courses. A task force composed of librarians and an instructional designer from the University Libraries, eLearning, and Academic Support was assembled. Examples of existing projects were surveyed, a timeline created, and goals and objectives were outlined. Relevant content was selected with emphasis on resources that could be accessed electronically. The process involved the selection of information categories, the organization of information under those categories, and graphic design of the eLibrary support center. The final product is accessible to online students by logging into Blackboard with a University of Toledo personalized account number. Included are links for finding ebooks, ejournals, and electronic reserves. Links to library liaisons, a Meebo widget for chatting with a librarian, and other avenues for assistance are present, along with a survey for feedback. A search engine enables students to find public libraries for interlibrary loaning outside of the OhioLINK consortium. The creation of the eLibrary Support Center illustrates one way librarians can utilize current technology to reach students beyond the brick and mortar library. Current statistics demonstrate the resource is being used consistently, and recent survey results show an 85.5% positive response. Future plans include usability studies for site improvement and the addition of video tutorials and instructional sessions.
Collaboration Leads to Integration: A Model for Integrating Library Resources into Online Learning

Anita Norton
Jennifer Castaldo
Johns Hopkins University

Abstract
Our library has created a model for library integration into our online courses. This process demonstrates how to maintain use of library services and resources. The model includes working in conjunction with the academic units, course developers and other support services such as instructional designers to include library content in the courses. Each professional brings a different set of skills to the course development process, making it much richer and enhancing the student’s experience. The librarians strategized and created a systematic way to begin course integration from the creation of the course. This team approach brings together the necessary tools/resources for a successful, robust course. The content expert can focus on fulfilling the obligation of managing the content and meeting outcomes, the instructional designer, though the library’s involvement knows the content provided from the library is stable and of great substance, while the librarians can insure the use of valuable resources and planned activities that help to educate the students in the research process and build on information seeking skills that will benefit them. The collaborative efforts tend to make the creation of courses more efficient and seamless. Before the course is launched the team of professionals meet, share ideas, and offer resources/services. The library’s value is increased as we become more a part of the course development process. Through the union of these professionals the students are introduced to the library resources, as well as encouraged to participate in activities that allow them to explore the library. What is unique about this model is, the librarians are active participants in the course development process (from the beginning) giving input, marketing services and resources and contributing to a much more informed and well rounded student. The library is an important part of the whole concept of educating and preparing the student for the future. Our involvement in the course development process has helped to change the perspective of the library and the value we bring the educational experience.
Professional Development in a Distributed Environment

Julie Poole
Mercer University

Abstract
A distributed teaching and learning environment causes challenges and opportunities in many areas of library work and success, including instruction, collection development, and document delivery, among others. Distance librarians are expected to participate in professional activities although many are themselves distant from major campuses. Collaboration between other library faculty and staff is also less available to these librarians who may have much to share and learn from others. The distance between locations and diversity of populations served by Mercer University’s three major campuses and three regional academic centers inspired the Faculty Welfare and Development Committee of the Division of Library Services at Mercer to create an annual teaching and learning summit. At this workshop, all members of Mercer’s Division of Library Services are invited to come together and spend an organized day of collaboration and idea sharing on some important aspect of librarianship. The first of these summits was held in the Summer of 2009 on the subject of instruction with sessions on instructional techniques, instructional technology, and marketing/outreach. Planning, assessment, and sustainability of ideas shared during the summit and of the program itself are important ongoing considerations.
Abstract
Northern State University, a four-year, liberal arts institution, is currently piloting tablet PCs for a campus-wide mobile computing initiative. This initiative has given the librarians at Northern an opportunity to review and modify the library instruction for Speech 101. Prior to the initiative, the students in Speech 101 received one, fifty-minute librarian-taught instruction session. This session taught students how to evaluate information, basic search techniques, and an overview and demonstration of widely used databases. On occasion, overlap in library instruction occurs when students in Speech are also taking English composition. Often, but not always, English faculty provide library instruction and students taking both classes tend to receive the same instruction. However, not all English instructors offer a library component in their composition classes. Thus, the decision to use Speech 101, which is also the designated ‘information literacy’ course on campus, seemed the most appropriate venue in which to take advantage of the mobile computing initiative. We decided to take Speech 101 instruction online and create a hybrid model for library instruction. Working with a speech faculty member, we created an online tutorial to introduce library concepts and then use the in-class, librarian-led instruction time for research assistance. Because the speech faculty member has four Speech 101 sections, we plan to compare traditional instruction in two of the sections with the hybrid model used in the other two. The advantages to this hybrid model include: a different instructional delivery for the students who also receive library instruction in English 101, students have access to the tutorial at any time, and the efficiency created by the students taking the tutorial before class time leaves more opportunity in-class for librarian assistance in their research process. Finally, placing the tutorial in LibGuides allows the library to gather usage statistics and provide flexibility for using the guides in other course instruction, tutorials or subject guides.
Librarians working with distance education students and faculty have long used screencasting software such as Adobe Captivate and TechSmith’s Camtasia to record and share information literacy tutorials. This poster will describe how Jing, free screencasting software from TechSmith, is used at the University of Washington/Cascadia Community College to develop information literacy instruction tutorials for students, share screenshots with chat reference patrons, and communicate amongst Libraries staff. We will discuss how Jing provides an opportunity for distance education librarians and subject librarians to collaborate on tutorial creation by using it in conjunction with Camtasia Studio, and how it can increase staff buy-in in creating e-learning objects. Technical aspects of recording screencasts and screen captures with Jing will be presented, as well as features like creating RSS feeds of screencasts, developing iTunes playlists of screencasts, and integrating Jing tutorials into LibGuides and other web spaces. A case study involving the use of Jing tutorials in conjunction with worksheets for distance learning students in an online English course will be presented. Student feedback regarding the screen captures will also be presented. This poster session will provide ideas for using Jing, tips and tricks for making the most of the software, and the ways in which Jing provides a useful way of solving communication and workflow issues.
Showing Distance Education Students How Using LibGuides and Adobe Captivate

Jessica Tapia
West Virginia University

Abstract
This poster session will show how combining the flexibility of LibGuides with the multimedia capabilities of Adobe Captivate creates a dynamic guide for distance learning students at West Virginia University. Including everything a distance education student may need to know about the library in a thirty minute orientation session is impossible. Tutorials, using Adobe Captivate’s screencasting ability, with step-by-step instructions should allow distance education students to register for interlibrary loan and access their online account more easily. In addition, the LibGuide pulls together the many different library resources and services available to distance education students, especially those also available to on-campus students. Assessment of this project will be handled in several ways, including determining how often the guide is accessed through LibGuides and assessing the number of questions the interlibrary loan department and distance learning library field from distance education students about registration.
Reaching Out to Alumni: Library Support of Lifelong Learning

Catherine Wells
Case Western Reserve University

Abstract
One of a library’s most important goals has been to develop innovative ways of creating, managing, using, and sharing information in response to a changing information environment. There is no doubt that the way students conduct research and access information has changed radically over the last ten years. While enrolled, our students have access to hundreds of research databases and thousands of online journals, reports, and more through the Library’s system. Our license agreements with the vendors of these databases stipulate that we can only allow off-campus access to current students, faculty and staff. For this reason once students have graduated they are, in effect, cut off from this type of resource even though the need for information continues on both the personal and professional fronts. Should your library start an alumni program that allows remote access to proprietary databases? How do you start a program, what is the cost, what do alumni want, how many other schools/libraries offer these types of programs, what are the benefits, what are the challenges? We will address how we managed these and other issues in the establishment and growth of a successful library alumni program.
DE Instructional Assessment: One Library’s Experiment

Angela Whitehurst
East Carolina University

Abstract

As assessment of programs, resources, and services becomes more prevalent in higher education, librarians find themselves having to develop assessment measures going beyond the quantitative statistics reported in the past. Assessing outcomes has proved to be a difficult task when teaching on-campus students, but it can be extremely challenging when the performance of distance education students must be measured. In an effort to address the need for assessment and to align the library with the ACRL Standards for Distance Learning Library Services, the J.Y. Joyner Library at East Carolina University piloted an assessment program for distance education library instruction. The purpose of the program was to evaluate the success of bibliographic instruction sessions provided to distance education students, both virtually and physically. Librarians at Joyner wanted to determine the strengths and weaknesses of instruction and devise strategies to address problem areas as the demand for library instruction for DE students has continued to grow. Piloted in the Summer and Fall of 2009, this assessment plan was modeled after the program used at Joyner Library for assessing student performance in traditional bibliographic instruction classes; it was, however, modified to fit the online environment as most distance instruction is performed virtually. Librarians were asked to assess student performance and achievement of learning outcomes through the use of feedback forms, questionnaires, quizzes, or the demonstration of a particular skill. Input from members of the teaching faculty was gathered through questionnaires asking about the improvement in assignments and use of library resources and if the outcomes specified by the librarian and faculty members were achieved. Librarians also participated in a self-assessment process to critique their instructional performance and determine areas needing improvement. This poster session will consist of information about the methods of instruction assessed, examples of the assessment forms, strengths and weaknesses of the program, and lessons learned.
WORKSHOPS
Cloud Computing for the Research Process

Mira Foster
San Francisco State University

Abstract
You don’t need a hard drive anymore --at least that is what cloud computing proponents would have you believe-- and there are real benefits and promising possibilities for using web-based services and technologies to help monitor important topics, store research materials and ideas, organize and integrate everything from thoughts, to notes, to papers and citations. Add to this the ability to share materials and interact with others, and guided inquiry and integrated learning become feasible for the off-campus online researcher. In this workshop we will discuss the advantages, disadvantages, possibilities, and limitations of cloud computing as an integral part of the research process, and we will explore a variety of web-based tools to meet the online researcher’s needs. Participants will use iGoogle to build an integrated research platform, share bibliographies and notes through Zotero, customize RSS feed readers to monitor narrow academic topics, and sample some of the smart phone applications that can be easily repurposed for formal research. From My Yahoo to My EBSCOHost, web sites and databases offer accounts and services to help streamline the search and research process for their users. For formal research, some tools stand out more than others, and there are ways to help users decide which will work best for them based on the nature of their topics and their learning styles. The session will include an introduction to Kuhlthau’s theories of guided inquiry, the information search process, mediation, and constructivism. In addition, users will evaluate their own note-taking and personal organization strategies in general and as they are applied in research and paper writing. This workshop will be a more focused and updated version of those given for California Library Association and Internet Librarian in 2007 and the invited workshop given at Computers in Libraries in 2008. The accompanying web site for these workshops can be found at http://libguides.sfsu.edu/nextgen.
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